

DEPARTMENT OF AGRICULTURE



ANNUAL REPORT



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Strategic Goals for the Agriculture and Fishing Sectors for 2017-2022

Agriculture plays a critical role in the Philippines' economy. Ten percent of the population is engaged in agriculture and related activities, and the sector contributes 9 percent to the country's Gross Value Added (Source: PSA).

Given the importance of the agriculture sector, the Philippine government, under a new helm, committed to take vital steps for its sustainable development and promotion.

- Sustained productivity growth
 - Prioritize crops of comparative advantage as guided by the national color-coded agriculture and fisheries map
 - Intensive technology updating, sharing, modernization, and mechanization program
 - Accelerate construction of climate-resilient, small-scale irrigation systems, and retrofit existing one
 - Raise investment in R&D, technology development
 - Strengthen the extension system
 - Pursue an ecosystems approach to fisheries management
- Increased access of farmers/ fisherfolk to value chain
 - Diversify into commodities with high value-adding and market potential
 - Physically link production areas to market through land, water transport, and logistic systems and infrastructure
 - Organize small farmers and fisherfolk into formal groups to create economies of scale
 - Provide capacity building for small farmers and fisherfolk on value-adding activities
 - Enhance rate of compliance to regulatory standards
- More accessible financing to small farm
 - Provide small farmers and fisherfolk easy access to affordable formal credit
 - Increase the number of small farmers and fisherfolk provided with agricultural insurance

Agriculture in the Philippine Economy

Share in the National Output

The country's Gross Domestic Product (GDP) continued its robust growth in the past five years with a 6.7 percent increase from the 2016 level (Table 1), bolstered by Manufacturing, Trade, Real Estate, Renting, and Business Activities. The Services sector remained the biggest contributor to the GDP with 57 percent share, followed by the Industry sector with 34 percent. The Agriculture sector, which contributed 9 percent to the national output,

rallied from the negative performance in 2016 with a 3.95 percent growth.¹

If the output of one of the big drivers of the economy, the Manufacturing subsector, were to be scrutinized, however, agriculture-based products comprised the bulk of the goods that spearheaded its growth. For instance, the GVA of food manufactures alone reached Php1.45 trillion at current prices. This was 47 percent of the Php 3.07 trillion GVA in Manufacturing.

¹ Includes Forestry.

Table 1. Contribution of the Agriculture and Fishery Sector to the National Economy, 2016-2017

| | 2016 | 2017 | % Change |
|---|-----------|-----------|----------|
| GDP at constant prices (in million Php) | 8,122,741 | 8,665,708 | 6.68 |
| Agriculture | 710,926 | 739,029 | 3.95 |
| Industry | 2,750,034 | 2,947,103 | 7.17 |
| Services | 4,661,781 | 4,979,575 | 6.82 |
| Share in GDP (%) | | | |
| Agriculture | 8.75 | 8.53 | (2.56) |
| Industry | 33.86 | 34.01 | 0.45 |
| Services | 57.39 | 57.46 | 0.12 |
| Share of Agri in Manufacturing (%) | 39.18 | 37.73 | (3.71) |
| Number of employed persons in agri-fishery (in '000 persons) | 11,064 | 10,261 | (7.26) |
| Share of employed persons in agri-fishery (%) | 26.90 | 25.44 | (5.43) |

Source: Philippine Statistics Authority (PSA).

Beverage and tobacco products, meanwhile, were valued at Php129 million and Php 9.2 million, respectively. Taken as one, these three agri-based products contributed more than 50 percent to the total Manufacturing subsector, underscoring the importance of Agriculture outputs to the economy, although not all of these were locally-sourced.

Meanwhile, agriculture and fishing provided income to about a quarter of the total labor force in 2017, employing 10.26 million persons.

The recovery of Agriculture in 2017 was fueled mainly by improvements in palay, corn, banana, poultry, and agricultural activities and services (Table 2). Declines, however, were noted in mango and coffee.

The Fishing industry continued its downturn, but it can be noted that the decrease marginally slowed down in 2017 by 0.89 percent from the 4 percent decline registered in 2016.

Table 2. Gross Value Added in Agriculture, Hunting, Forestry, and Fishing, 2016-2017, in Php million

| INDUSTRY/ COMMODITY | 2016 | 2017 | % Change | Share in 2017, % |
|---|---------|---------|----------|------------------|
| TOTAL GROSS VALUE ADDED IN AHFF | 710,926 | 739,029 | 3.95 | |
| 1. AGRICULTURE, HUNTING AND FORESTRY | 587,579 | 616,780 | 4.97 | 83.46 |
| a. AGRICULTURE | 583,932 | 613,401 | 5.05 | 83.00 |
| Crops | 338,532 | 360,679 | 6.54 | 48.80 |
| Palay | 137,476 | 150,400 | 9.40 | 20.35 |
| Corn | 39,144 | 42,969 | 9.77 | 5.81 |
| Coconut including copra | 26,632 | 26,838 | 0.77 | 3.63 |
| Sugarcane | 14,459 | 18,818 | 30.15 | 2.55 |
| Banana | 32,566 | 33,522 | 2.94 | 4.54 |
| Mango | 15,195 | 13,770 | (9.37) | 1.86 |
| Pineapple | 16,724 | 17,130 | 2.43 | 2.32 |
| Coffee | 2,514 | 2,261 | (10.08) | 0.31 |
| Cassava | 10,382 | 10,578 | 1.89 | 1.43 |
| Rubber | 2,783 | 3,119 | 12.07 | 0.42 |
| Other crops | 40,657 | 41,274 | 1.52 | 5.58 |
| Livestock | 104,153 | 105,298 | 1.10 | 14.25 |
| Poultry | 83,478 | 87,206 | 4.47 | 11.80 |
| Agricultural activities and services | 57,769 | 60,218 | 4.24 | 8.15 |
| b. FORESTRY | 3,647 | 3,379 | (7.34) | 0.46 |
| 2. FISHING | 123,347 | 122,249 | (0.89) | 16.54 |

At constant 2000 prices. Source: PSA.

Top Contributors to Agricultural Performance

In 2017, eight commodities accounted for about 80 percent of the Php 739.03 billion GVA in AFF. These include palay, fisheries, livestock, poultry, corn, banana, coconut (including copra), and sugarcane (Table 3). With the exception of fisheries, these commodities also posted gains from their respective 2016 values. Sugarcane, in particular, reclaimed the 8th spot after spending the past five years hovering in the 9th or 10th place, edging out pineapple in 2017.

Table 3. Eight commodities that make up about 80% of total agricultural output, 2017

| Commodity | GVA in Php million (at constant prices) | % Share |
|----------------------------|--|--------------|
| Palay | 150,400 | 20.35 |
| Fisheries | 122,249 | 16.54 |
| Livestock | 105,298 | 14.25 |
| Poultry | 87,206 | 11.80 |
| Corn | 42,969 | 5.81 |
| Banana | 33,522 | 4.54 |
| Coconut including copra | 26,838 | 3.63 |
| Sugarcane | 18,818 | 2.55 |
| Total | 587,299 | 79.47 |

Source: PSA.

Highest in Growth Rate

The following commodities recorded the fastest production growths from their respective 2016 levels: onion, sugarcane, rubber, skipjack, corn, palay, dairy, chicken eggs, peanut, and chicken.

Distribution of good quality seeds improved the production of onion, corn, palay, and peanut. The promotion of hybrid and inbred certified seeds, and proper fertilizer application also contributed to the growth in palay production.

Quality planting materials likewise boosted sugarcane production.

Table 4. Top ten fastest-growing commodities, 2017

| Commodity | Volume in '000 MT | | % Change |
|--------------|-------------------|-----------|----------|
| | 2016 | 2017 | |
| Onion | 122.59 | 184.43 | 50.44 |
| Sugarcane | 22,370.55 | 29,286.89 | 30.92 |
| Rubber | 362.63 | 406.98 | 12.23 |
| Skipjack | 220.11 | 241.66 | 9.79 |
| Corn | 7,218.82 | 7,914.91 | 9.64 |
| Palay | 17,627.24 | 19,276.34 | 9.36 |
| Dairy | 21.16 | 22.76 | 7.56 |
| Chicken Eggs | 461.72 | 492.41 | 6.65 |
| Peanut | 27.92 | 29.37 | 5.19 |
| Chicken | 1,674.51 | 1,745.89 | 4.26 |

Source: PSA.

Sugarcane also benefitted from sufficient rainfall as it recovered from the dry spell in 2016; while rains increased the number of tappable trees for rubber production. Other crops that received a boost from adequate water supply were corn and palay. Sufficient soil moisture was advantageous, as well, for peanut during pod formation.

Good buying prices of cup lump also encouraged tapping activities in North Cotabato, Basilan, and Agusan del Sur, while high farmgate prices and higher productivity of dairy animals the factors attributed to the gains in dairy production.

High prices similarly spurred more unloadings of skipjack in Metro Manila. Other reasons for the increase in skipjack production were the opening of the High Seas Pocket Number 1 in March 2017, fewer weather disturbances, more harvests from *payaos*, and efficient use of fishing gears.

Production of chicken eggs grew in 2017 due to the expansion of commercial layer farms in the Ilocos region, CALABARZON, Central Visayas, Eastern Visayas, Davao region, and SOCCSKSARGEN. Better egg-laying efficiency ratio (ELER) was likewise noted in most regions. Other reasons for the increase in production of chicken eggs were the repair and expansion of poultry houses in Quezon, opening of new layers farms in Palawan, and the availability of ready-to-lay pullets (young hens).

Meanwhile, the opening, rehabilitation, and expansion of some broiler farms in CAR, Cagayan Valley, Central Luzon, Eastern Visayas, Zamboanga Peninsula, and Davao region aided in the growth of chicken production in 2017. Other reasons cited include the opening of new commercial farms in CAR, Western Visayas, and SOCCSKSARGEN.

Export of Agricultural Products

Among agricultural or agro-based products, coconut oil recorded the largest value of exported volume in 2017 at USD 1.5 billion, followed by fresh bananas with USD 662 million and pineapple products with USD 554 million (Table 5).

Table 5. Top 10 Agriculture Exports in 2017, FOB Value in USD

| Top 10 Agri Exports | Value (USD) |
|----------------------------------|----------------------|
| Coconut Oil (crude and refined) | 1,504,121,914 |
| Fresh bananas | 662,269,632 |
| Pineapple and Pineapple Products | 554,074,875 |
| Tuna | 399,432,454 |
| Shrimps and Prawns | 349,565,315 |
| Desiccated Coconut | 253,937,113 |
| Seaweeds and Carrageenan | 164,183,362 |
| Unmanufactured Tobacco | 100,323,581 |
| Natural Rubber | 92,988,904 |
| Copra Oil Cake or Meal | 41,099,335 |
| TOTAL | 4,121,996,485 |

Source of raw data: PSA

The total value of agricultural exports in 2017 reached USD 5,621 million and was 8.89 percent of the total value of Philippine exports (Table 6). This was also 9 percent higher than the USD 5,156 million recorded in 2016.

Agricultural imports, on the other hand, posted a total value of USD 11,167 million, higher by 1.53 percent from the 2016 level. The trade deficit in agriculture dropped marginally by 5 percent to USD 5,545 million from USD 5,843 million in 2016.

Table 6. Summary of Philippine Agricultural Trade, 2016-2017*

| PARTICULARS | 2016 | 2017 | % Change |
|---|-------------------|-------------------|---------------|
| EXPORTS (FOB Value in USD million) | | | |
| Total Exports | 57,406.12 | 63,233.34 | 10.15 |
| Agricultural Exports | 5,155.62 | 5,621.72 | 9.04 |
| % Share of Agri Exports to Total Exports | 8.98 | 8.89 | (1.01) |
| IMPORTS (CIF Value in USD million) | | | |
| Total Imports | 88,153.35 | 97,144.81 | 10.20 |
| Agricultural Imports | 10,998.32 | 11,166.97 | 1.53 |
| % Share of Agri Imports to Total Imports | 12.48 | 11.50 | (7.86) |
| TOTAL TRADE (USD million) | | | |
| Total Trade | 145,559.47 | 160,378.16 | 10.18 |
| Total Agricultural Trade | 16,153.95 | 16,788.69 | 3.93 |
| % Share of Agri to Total Trade | 11.10 | 10.47 | (5.67) |
| Balance of Trade | (5,842.70) | (5,545.25) | (5.09) |

*Based on quarterly estimates; 2017 data is preliminary; source: PSA

Farmgate Prices

The average farmgate prices of the crops subsector went up by 2.63 percent (Figure 1) with farmers of major staples enjoying higher prices for their produce as farmgate prices of rice and corn increased by 4.83 and 1.20 percent, respectively (Table 7).

Table 7. Average Farmgate Prices (Php per kg), 2016-2017

| Commodity | 2016 | 2017 | % Change |
|-----------|-------|--------|----------|
| Palay | 17.28 | 18.11 | 4.83 |
| Corn | 11.82 | 11.96 | 1.20 |
| Mango | 28.51 | 39.13 | 37.26 |
| Coffee | 83.13 | 97.19 | 16.92 |
| Rubber | 23.80 | 27.73 | 16.50 |
| Banana | 16.59 | 16.08 | (3.05) |
| Pineapple | 9.02 | 9.56 | 6.02 |
| Cassava | 6.31 | 6.53 | 3.56 |
| Abaca | 58.96 | 64.10 | 8.73 |
| Mungbean | 49.13 | 53.35 | 8.60 |
| Cabbage | 21.18 | 17.29 | (18.36) |
| Eggplant | 17.80 | 21.53 | 20.96 |
| Tomato | 15.71 | 16.53 | 5.25 |
| Garlic | 51.57 | 85.82 | 66.42 |
| Onion | 35.52 | 28.84 | (18.79) |
| Hog | 94.74 | 106.78 | 12.70 |
| Chicken | 89.46 | 89.70 | 0.27 |
| Milkfish | 87.88 | 91.37 | 3.97 |
| Tilapia | 69.07 | 73.94 | 9.39 |

Source: PSA

Garlic, eggplant, coffee, and rubber were the top price gainers for the year owing to high demand. Price cuts, on the other hand, were noted for onion, cabbage, and banana due to generally high supplies recorded in the second and third quarters.

All other subsectors posted price increments, with both the livestock and fisheries significantly recovering from the decline in 2016 at 11.55 and 8.24 percent, respectively.

On the consumption side, the food price index advanced 3.7 percent in 2017 compared to 2.5 percent in 2016.



Figure 1. Growth Rate of Average Farmgate Prices in 2017, %

Building a Sound and Sustainable Agriculture and Fisheries Program

2017 marks the first full year of the new administration whose priorities for the country's agriculture and fishery sectors are firmly anchored on providing the much-needed support for farmers and fisherfolk in order to produce sufficient and affordable food for the nation.

The Department of Agriculture has begun to lay down the groundwork as early as 2016 in support of this goal and continues to adopt strategies that have worked well in the past.



National Color-Coded Agricultural Guide Map (NACCAG)

- Launched on March 7, 2017.
- Developed under the DA's Adaptation and Mitigation Initiative in Agriculture (AMIA) Project in partnership with SEARCA and the University of the Philippines – Los Baños (UPLB), the **NACCAG** was one of the tools developed as basis for landscape planning of agricultural production and natural resource management in the upland, lowland, and coastal ecosystems.
- It overlays data on soil properties, elevation, slope, rainfall pattern, temperature, and climate-induced multi-hazards. Other data that may be accessed from the map include poverty incidence and agro-ecological zones.
- Can guide the government in making sound analysis for agricultural policy-making and may aid LGUs in the development of their Comprehensive Land Use Plans (CLUP) and the implementation of climate change risk reduction measures.
- Site: <http://www.farmersguidemap.da.gov.ph/>

shows the natural suitability of **20** economically-important crops

National Food Consumption Quantification Survey (NFCQS)



- The NFCQS will be funded by the Food and Agriculture Organization's (FAO) Technical Cooperation Programme (TCP). The TCP Agreement between DA and FAO is awaiting approval from the Department of Finance (DOF).
- The result of this study will be a great tool to the Department's formulation of plans and programs that is more responsive to the needs of the people particularly in projecting the volume of food needed in the future to support the growing population.
- It will generate updated data and enhanced analysis on major food consumption patterns of Filipinos and the country's current production of major food commodities.

INTER-AGENCY COLLABORATIONS



Easy Access Financing Program



Production Loan Easy Access (PLEA) is a credit program designed to provide fast, convenient, and affordable credit to marginal farmers and fisherfolk. It is a non-collateral loan for agri-fishery production at 6% interest rate per annum payable in 2-10 years.

Php1.05 billion credit fund has been approved for 2018 for the PLEA expansion to include areas for hybridization and mechanization.



Php 768.70 million
financial assistance
granted

28,708
farmers &
fisherfolk assisted



Survival and Recovery Assistance (SURE) is a quick-response, post-disaster survival and recovery loan assistance program for farmers and fisherfolk affected by natural calamities and disasters such as those affected by typhoons, the Avian Influenza outbreak, and the conflict in Marawi.



Php 66.96 million
financial assistance
granted

4,219
farmers assisted



Intensive Technology Updating and Sharing, Modernization, and Mechanization Program



- The **National Agri-Fishery Mechanization Program** was approved on April 7, 2017. This is the 6-year Philippine mechanization development blueprint that aims to promote and support the local development and manufacture of agricultural and fishery machinery by the private sector through research grants and credit; establishment of quality, safety, and performance standards as well as strategically-located testing centers that can certify these machineries; and promotion of certified agricultural and fishery machinery.

111 applications for
Test Engineer
Accreditation
processed



Certificates for Test
Engineers for
Agricultural & Fishery
Machinery &
Equipment issued

34

- Conducted the **5th Makina Expo 2017** at the Iloilo Convention Center (ICC) and the Western Visayas Integrated Agricultural Research Center (WESVIARC) in Hamungaya, Jaro, Iloilo City from September 7-9, 2017 to enhance awareness on the effectiveness of using modern agricultural machineries and to bring farmers closer to the latest mechanization technologies on production, postharvest and irrigation showcased by 65 exhibitors.
- A credit facility dubbed as the **Farm Machineries and Equipment Loan Program** is set to be launched in 2018 that shall finance the acquisition of farm machineries that would improve farm productivity and efficiency, as well as reduce postharvest loss.

Strategic and Effective Postharvest, Storage, and Processing Facility



10

Agri-Pinoy Trading Centers

operational in Cordillera, Ilocos, Cagayan Valley, Central Luzon, Bicol, Central Visayas, and Caraga, the biggest of which is the Benguet APTC (BAPTC)



BENGUET AGRI-PINOY TRADING CENTER

has 3 spot trading bays that can accommodate 220 trucks at a time, a 2-storey commercial building that houses a restaurant/ dining area, dormitory, and business stalls, cold and dry storage, computerized monitoring center, and parking space for 300-400 vehicles

383



production sources

Benguet Province, Mountain Province, Ilocos Sur, Abra, & Ifugao

71,277 MT



total volume of vegetables

traded in 2017 (chayote, cabbage, potatoes, carrots, cauliflower, broccoli, lettuce, tomato, sweet potato, etc.)

4,000



farmers transacted in 2017

54 farmers' groups

537 market facilitators

76 buyers

Enforcement of Agricultural and Fisheries Laws

Under Secretary Piñol's agenda to carry out a relentless campaign for the enforcement of agricultural and fisheries laws, especially on land conversion and illegal fishing, the following activities have been undertaken:

On Land Use Reclassification:



Legal documents issued:

- Moratorium on the "Acceptance of Land Use Reclassification Applications..." (DA Memorandum dated August 3, 2016)
- "Cessation on Conversion of Agricultural Lands..." (DA Memorandum dated August 17, 2016)
- DA Administrative Order No. 01 series of 2017, "Guidelines on Issuance of Certification for Land Use Reclassification," made effective on March 1, 2017.



- Conducted orientation workshops on AO No. 1 with DA Regional Executive Directors and other stakeholders to orient, acquaint, and gain common knowledge and understanding on the land use reclassification process.

On Illegal Fishing:



With the approval of RA 10654, otherwise known as "An Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing amending The Philippine Fisheries Code of 1998", the monitoring, control and surveillance activities of the BFAR has been intensified particularly in areas observing closed fishing season and other hot spot areas such as the West Philippines Sea and the eastern seaboard.



127 MCS vessels and patrol boats deployed



4,241 field operations conducted



Php 16.6M fines collected

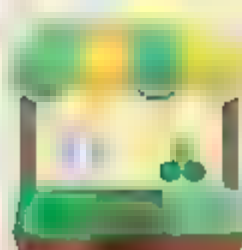
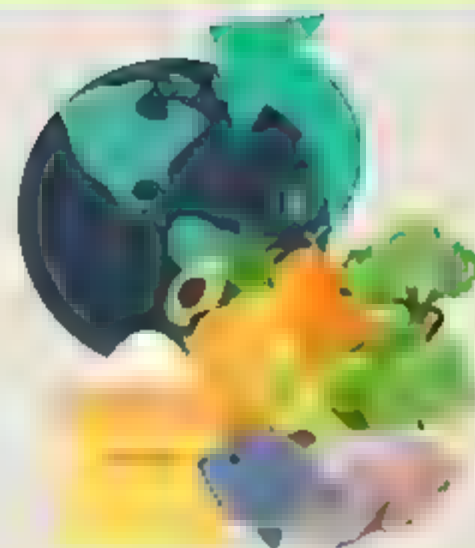


861 violations detected

Aggressive Marketing of Agricultural Products

Explore and expand market opportunities for agri commodities

- Increased banana and pineapple exports to China by 42% due to lifting of ban.
- Booked close to Php 630 million in sales in various trade events for fresh and processed fruits, vegetables, and fishery products, such as banana chips, dried mangoes, and dried and bottled fish, colored rice, and poultry and organic products.
- Pursuing market access requests (MARs) to bring quick-frozen fruit, hass avocado, and milled rice to China, fresh avocado, calamansi, and okra to Russia, and mango and fresh okra to Korea.



TienDA Farmers and Fisherfolks Outlet

launched to assist producers in selling their produce directly to consumers at farm gate prices



Php 7M total sales generated



480 group beneficiaries

Policy Shifts and Technology Innovations



Free Irrigation Services & Use of Solar-Powered Irrigation Systems

DA was instrumental in delivering the President's commitment to provide free irrigation for small farmers

Solar-Powered Irrigation Systems

- Powered by renewable, environment-friendly energy launched by the President in North Cotabato in February 2017, with approved implementation guidelines
- Design work completed in 15 sites



Crafting of Commodity Roadmaps

Cacao & Coffee Industry Roadmaps

Completed and signed before the President on March 7, 2017.



Ongoing Crafting of the following Industry/ Commodity Roadmaps:
fiber, livestock, dairy, backyard poultry, garlic, onion



Pursued Sustainable Fisheries Production and Management



F/B Pagbabago Program

A livelihood program which targets to distribute fiberglass reinforced plastic boats to fishing families to ensure resiliency and safety of fishermen at sea.



5,082

units distributed to fisherfolk beneficiaries

Project Balik Sigla sa Ilog at Lawa

Launched in June 2017 in Laguna de Bay and aimed at repopulating lakes, rivers, and creeks with over 200 million fingerlings in major lakes and river systems by 2022.



Highlights of Accomplishments by Major Final Output

The agriculture sector's outcome statements for the medium term, as affirmed in the updated Philippine Development Plan 2017-2022, consist of improving agricultural and fishery productivity and increasing agriculture and fishery-based enterprises. In support of this and to ensure the sustainability of interventions that improve economic opportunities among farmers and fisherfolk, the DA allocated its budget to eight Major Final Outputs or MFOs: Agriculture and Fishery Policy Services; Technical and Support Services; Farm-to-Market Road Network Services; Agricultural Equipment and Facilities Support Services; Irrigation Network Services; Plant and Animal Regulation Services; and Credit Facilitation Services (Figure 2).

MFOs are goods and services that the DA is mandated to deliver to external clients through the implementation of agency programs, activities, and projects.

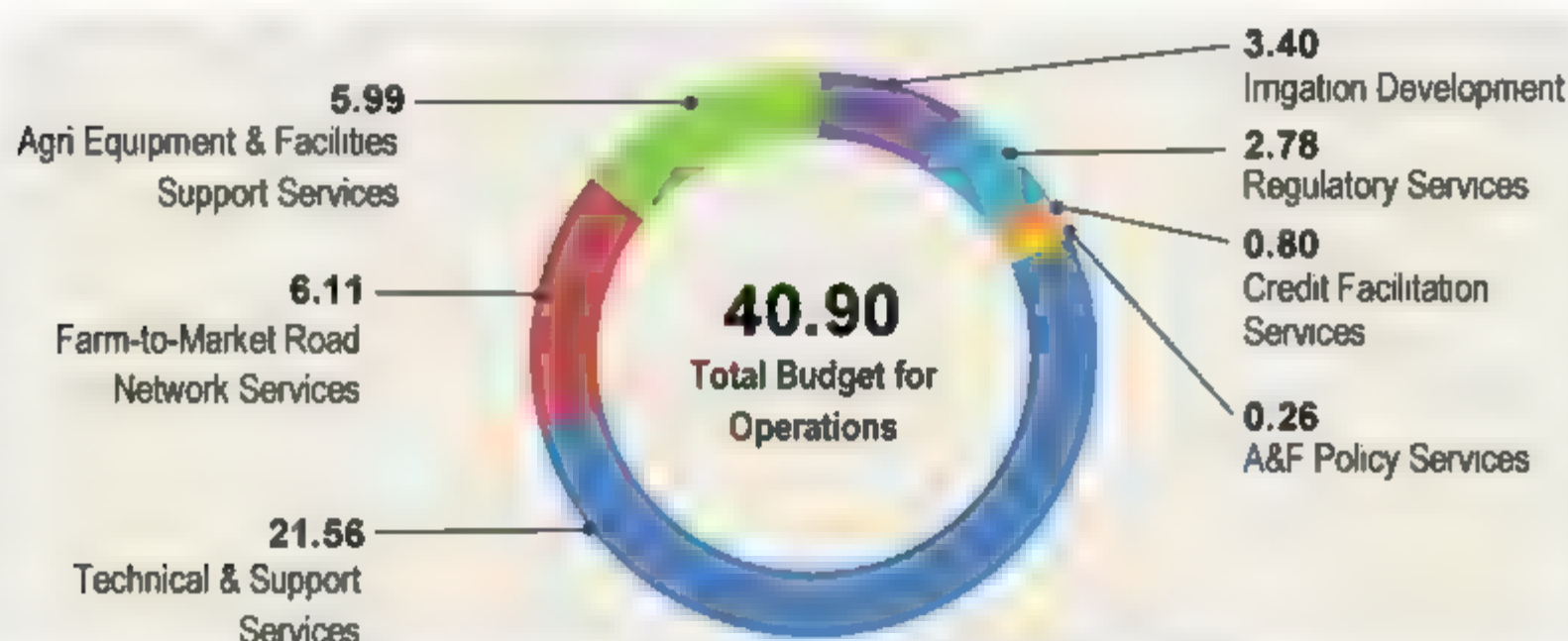


Figure 2. DA's 2017 Budget by Major Final Output (MFO), in billion Php

Technical and Support Services

Included in the government's strategies to improve agriculture and fishery productivity are the vigorous promotion of the latest production technologies (such as the utilization of high-yielding seed varieties), expansion into new and innovative marketing scheme, strengthening of the extension system, and the pursuit of relevant research that will contribute to better income or livelihood opportunities.

In 2017, the DA provided technical and support services to a total of 1.24 million hectares of various crops (Table 8). Including the livestock sector, about 654,091 individuals and 15,498 farmer groups/ associations and Local Government Units (LGUs) were provided with

assistance on production, marketing, and extension/ training.

Table 8. Program area provided with technical and support services in 2017

| Crop | Area in 2017 (ha) |
|-------------|-------------------|
| Palay | 84,276 00 |
| Yellow Corn | 676,585 00 |
| White Corn | 181,435 00 |
| Cassava | 119,357 00 |
| Mango | 459 00 |
| Coffee | 6,267 00 |
| Cacao | 14,387 00 |
| Rubber | 4,789 00 |
| Banana | 620 00 |
| Pineapple | 45 00 |
| Abaca | 153,905 16 |

Source: DA National Programs for Rice, Corn, High-Value Crops, and PhilFIDA

Highlights of the DA's assistance under technical and support services are laid out in the following sections.

Production Support Services

To uphold the Department's thrust of improving production and productivity, the DA continued to provide good quality inputs to farmers and fisherfolk, such as seeds, planting

materials, animals, fertilizer and other soil ameliorants, and other production support services to 384,116 individuals and 12,620 farmer groups/ associations and LGUs. In addition, about 110,800 fisherfolk benefitted from the provision of fish seed, broodstock, seaweed propagules, and various environment-friendly fishing gears.

Crops, Livestock, and Poultry Sectors

Production Support Services – Rice Program

Beneficiaries:



101,846
Individuals



919
Groups

2,677,070 kg

Palay seeds
distributed

Top seed types distributed:

- Inbred 1,136,038 kg (42%)
- Certified 1,019,185 kg (38%)

Top 3 seed recipients:

- SOCCSKSARGEN 932,386 kg (35%)
- Ilocos Region 524,295 kg (20%)
- Caraga Region 292,740 kg (11%)

Production Support Services – Corn Program

Beneficiaries:



35,190
Individuals



570
Groups

211,921 kg Bufferstock seeds
distributed

Top 3 seed recipients:

- Zamboanga Peninsula 63,360 kg (30%)
- Caraga Region 49,792 kg (23%)
- CALABARZON 53,210 kg (25%)

Other interventions:

- Cassava cuttings 4,576,292 pieces
- Trichocards 3,414,609 pieces
- Bio-control agents 33,341,670 pieces
- Fertilizers 152,508 pieces

Production Support Services – High-Value Crops



23.86M pcs.

Planting materials
(PM) distributed

Top types of PM distributed:

- Cacao 5.21M pcs (22%)
- Sweet Potato 3.88M pcs (16%)
- Coffee 3.67M pcs (15%)

Top recipients of PM:

- Nor Mindanao 5.06M pcs (21%)
- Cagayan Valley 2.75M pcs (12%)
- Davao Region 2.60M pcs (11%)

Area Planted (hectares)



6,267

Coffee



14,387

Cacao



4,789

Rubber

1.17M kg

Vegetable seeds
distributed

Top recipients of vegetable seeds:

- MIMAROPA 644,398kg (55%)
- Central Luzon 197,055kg (17%)

Production Support Services – Fiber Industry

1,606 has.
Abaca farm areas established

881.40 has.
Abaca farm areas rehabilitated

 3,095

Farmer-beneficiaries of abaca area expansion & rehabilitation

Distributed:

Abaca

55,595 pcs
plantlets

106,534 pcs
seedlings

2,146 kg*
seeds

Beneficiaries:

 90

Individuals

 74

Groups

50,853 pcs (132.96 has. area)
Mulberry cuttings distributed

15,400 pcs (100.34 has. area)
Sisal bulbils distributed

310 kg (50.64 has. area)
Cotton seeds distributed

30.5 boxes
Silkworm eggs distributed

357 kg

Equivalent Fresh Cocoons

Abaca Disease Management (ADM)

4,995.65 has.
Area of abaca farms
subjected to ADM

 1,997

Farmer-beneficiaries of ADM

Areas per region subjected to ADM:

- Bicol Region 595.1 has. (12%)
- Western Visayas 314 has. (6%)
- Eastern Visayas 2,384 has. (48%)
- Zamboanga Pen. 207.75 has. (4%)
- Davao Region 403.14 has. (8%)
- Caraga Region 1,051.6 has. (21%)

*4,000 abaca seeds per kilogram

Production Support Services – Organic Agriculture Program




400,804.5 has.
Area under organic
agriculture cultivation

80% of the program's target

Beneficiaries:

 12,812 Individuals

 1,237 Groups

64,014.13 kg

Seeds distributed
(rice, corn, vegetables)



Top recipients of
organic seeds:

- Western Visayas 16,561.53 kg (26%)
- Central Visayas 12,849.15 kg (20%)
- Cagayan Valley 11,597.22 kg (18%)



124,086 pcs
Planting materials
distributed



370,952.33 kg
Fertilizers and soil
ameliorants distributed



3,347,278.65 pcs
Biocontrol agents
distributed





2,915 heads
Animals distributed

Production Support Services – Livestock & Poultry

24,197 Animals distributed

Beneficiaries:

 1,987 Individuals

 158 Groups

Top animal recipients:


- Central Luzon --- 7,176 (30%)
- Ilocos Region -- 3,485 (14%)



4,395 kg
Forage seeds
distributed

3,245,777 pcs.
Forage cuttings
distributed

Beneficiaries:

 4,404 Individuals


 68 Groups



173,239
Semen straws
distributed

Beneficiaries:

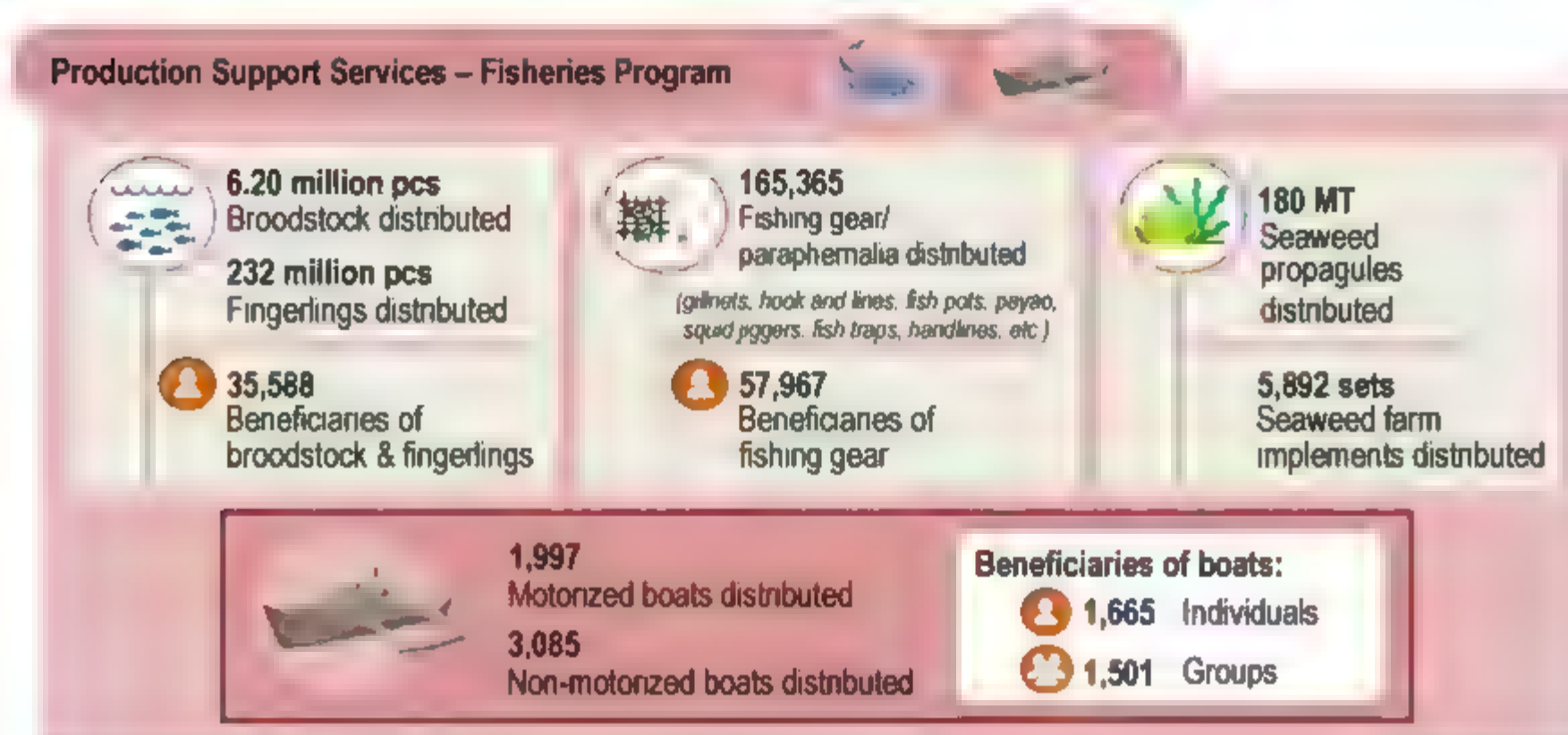
 34,794 Individuals

 256 Groups

Fishery Sector

The National Fisheries Program is focused on the management, conservation, and protection of the country's fisheries and aquatic resources, as well as the improvement of the plight of fishing communities through the promotion of livelihood interventions. These emphasize the country's vision of a fisheries industry that is grounded on the three pillars of sustainability: (1) environmentally-friendly, (2) socially equitable, and (3) economically viable towards fisherfolk development and food security for the country.

The Bureau of Fisheries and Aquatic Resources (BFAR) intensified its development programs for the sector, which include, among others, aquaculture development and distribution of fishing gears and paraphernalia.



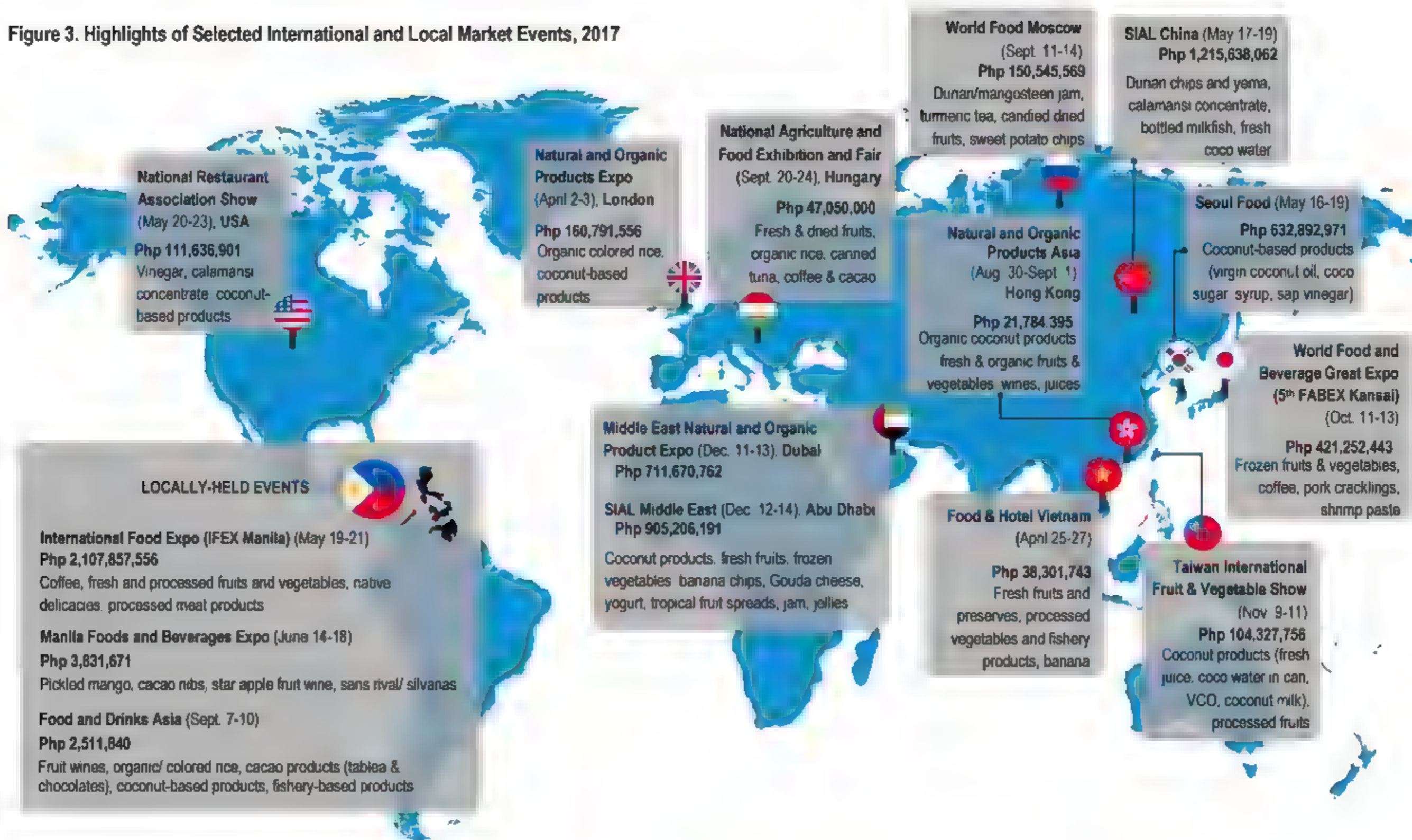
Market Development Services

To sustain the promotion of Philippine agriculture and fishery products, as well as agribusiness investments, the Agribusiness and Marketing Assistance Service (AMAS) of the DA conducted and participated in various local and international market-related events through new and existing partnership mechanisms with producers, traders, exporters, importers, investors, entrepreneurs, LGUs, and other DA operating units.

In 2017, AMAS facilitated participation in 47 local fairs and other market-related events which generated total sales of Php21.51 million. On the other hand, participation in 28 international trade fairs (seven of which were locally-held) resulted in total sales of Php608 million, while sales under negotiations were reported to reach more than Php8.5 billion.

Figure 3 highlights some of these market events and the Philippine products showcased therein.

Figure 3. Highlights of Selected International and Local Market Events, 2017



For the local scene, the DA resolved to firm-up its marketing assistance for stakeholders engaged in agriculture and fishery through the *TienDA Farmers and Fisherfolks Outlet* where they can sell their produce directly to consumers at farmgate prices. This priority project of the DA, which is in line with the government's vision of providing available and affordable food for the Filipinos, was launched on July 28, 2017. In addition to reducing marketing layers for the benefit of producers and processors, consumers, in turn, enjoyed having fresh and cheaper agri-fishery produce.

In 2017, 11 *TienDAs* were conducted in various locations with total sales reaching Php 7 million for the benefit of 480 farmers, farmer groups/cooperatives, and micro, small, and medium enterprises (MSMEs). Best sellers include commercial rice (Dinorado, Sinandomeng), special variety rice (red, brown, black), salted egg, sugarcane juice, assorted fruits and lowland vegetables, fresh/ live seafood, smoked fish and other processed fishery products, corn and corn products, banana, durian, marang, and other rare fruits (pomelo, guyabano, passion fruit, avocado).

The DA also forged a partnership with the Ayala Land Inc. to conduct the *TienDA* in various Ayala Malls in order to bring the outlet to major cities and commercial areas nationwide. The project was launched in two sites: Abreeza Mall in Davao City on November 18-19, 2017 and in Ayala Center, Cebu City on November 25-26, 2017. The Ayala Malls provided the spaces and amenities to the farmers for free as part of their advocacy to help small farmers and fishers sell their produce directly to the consumers.

One of the *TienDA* outlets held during the year (August 17-18) also served as a venue to increase awareness that poultry products were safe to

eat and free from Avian Influenza through free tasting of delicacies such as fried duck and *balut* from Candaba, Pampanga.

The DA collaborated as well with the Department of National Defense (DND) in conducting *TienDA* in military camps. Since its launch in the Bonifacio Naval Station (BNS) on October 28-30, 2017, the DA and DND are working on bringing *TienDA* outlets to more military camps (such as Camp Mawab in Compostela Valley and Camp Panacan in Davao).

The promotion of agribusiness investment opportunities also continues to be undertaken by AMAS to help increase farmers' incomes as well as improve the productivity of MSMEs. Fifteen (15) local and three international investment forums and enterprise development seminars were conducted in 2017 which reached a total of 948 participants. The international investment forums were carried out for the benefit of Overseas Filipino Workers (OFW) in Myanmar, Hong Kong, and Korea and, in extension, their families in CALABARZON, Western Visayas, and SOCCSKSARGEN, to encourage them to invest in agro-industrial and agribusiness enterprises.

Linkages between prospective markets and producers of fishery products are also pursued by the government through product promotion and market matching. Thus, in 2017, BFAR participated in 178 agri-aqua fairs and exhibits and 24 investment forums, while also



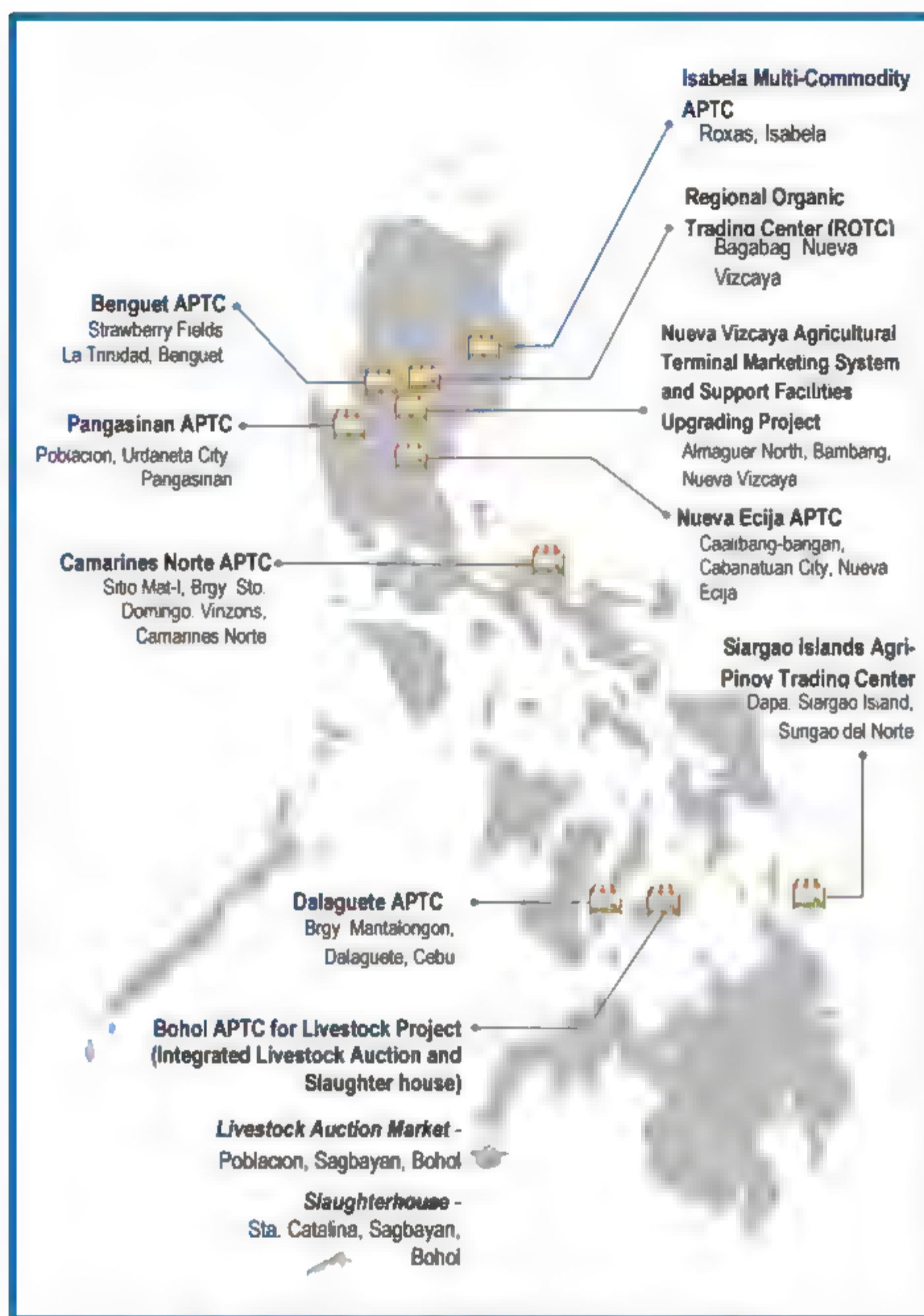


Figure 4. Ten Operational Agri-Pinoy Trading Centers as of 2017

coordinating 131 market-matching activities, all for the benefit of about 2,504 individuals.

In addition to the conduct or facilitation of these market-related events, the

implementation of Agri-Pinoy Trading Centers (APTC) in strategic locations nationwide is continuously being monitored by the DA. These APTCs were designed to aid in addressing concerns such as unfavorable prices received

by small farmers and fisherfolk and high prices paid by food processors, market vendors, and end-consumers. To date, 10 APTCs are now operational (Figure 4) while nine are under construction, and four are on the planning stage. An estimated 39,000 farmers, fisherfolk, and raisers have so far been served by the operational facilities. Appendix A provides details of the operations of these 10 APTCs.

The DA also spearheaded the Food Lane Project (FLP) in collaboration with the Metro Manila Development Authority (MMDA), Department of the Interior and Local Government (DILG) and the Philippine National Police (PNP). The project is aimed at ensuring the efficient distribution of agricultural products from production sites to the major demand centers of Metro Manila. Food lane routes were designated to provide 24-hour access (i.e., exemption from the truck ban) to truck/vehicles accredited with the project. As of November 2017, a total of 758 trucks/ vans have been registered under the FLP.

Meanwhile, the DA's National Rice Program (NRP) is implementing the Corporate Rice Farming Program (CRFP) as a strategic model that will integrate and consolidate small and medium rice enterprises from production to marketing activities through institutional marketing systems. It aims to address the lack of accessibility and availability of rice especially among marginalized sectors of the society without sacrificing the welfare of rice farmers. The program has coordinated with possible markets such as the Ayala Foundation Inc. (AFI) and other local markets for possible establishment of partnership agreements.

In February 2017, Ayala Corporation Chairman and CEO, Jaime Augusto Zobel de Ayala, along with Ayala Foundation President, Ruel Maranan, confirmed their support to the CRFP by engaging the Ayala Group of Companies. The MOA signing is the first of the formal partnership between the Ayala Group and farmers' cooperatives. DA, in collaboration with

AFI and Ayala Cooperative (AC), identified two possible markets for the Farm Service Providers' rice produce. These are institutional markets composed of Ayala-owned/-managed hotels (e.g., SEDA, Holiday Inn, etc.) and regular household markets which constitute the regular employees of Ayala Companies (e.g., Globe, Avida, etc.).

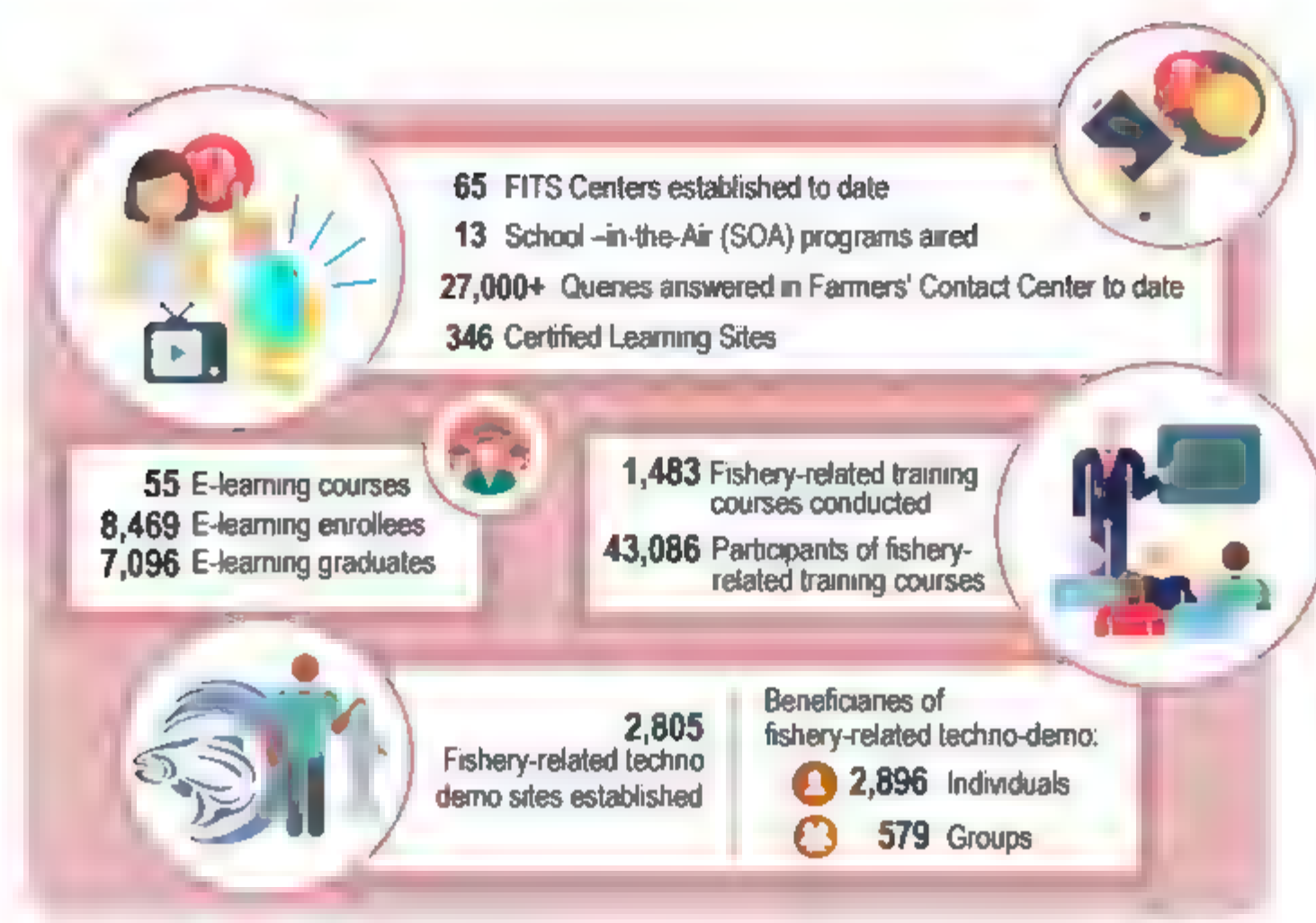
Currently, the CRFP has 18 active Farm Service Providers matched with possible markets within their respective localities. Moreover, two MOAs were signed between AFI and PARCOFED (Palawan Arc Cooperative Federation) in September 2017, and Dingle Multi-Purpose Cooperative of Western Visayas in August 2017.

Extension, Education, and Training Support Services

The Department's extension and training arm – the Agricultural Training Institute (ATI) – continued to uphold its purpose in serving the country through coordinating various proactive and responsive extension delivery services. Numerous activities and programs have been implemented by the ATI to attend to its beneficiaries' needs.

In order to enhance the accessibility of extension services and products, the ATI established Farmers' Information and Technology Services (FITS) Centers nationwide to serve as delivery channels of the e-Extension Program in the local government level. While 40 existing FITS Centers continued to be enhanced, 25 additional Centers were established in 2017, further widening the scope of knowledge dissemination.

Meanwhile, School-in-the Air (SOA) programs were aired across the country as a distance learning tool on the complete package of technology of a commodity and other agriculture- and fisheries-related subject matter. In 2017, 13 SOA radio programs were aired across the country through the ATI's



Regional Training Centers in partnership with LGUs.

To establish a more efficient alternative to traditional extension systems, ATI and its partner institutions implemented the e-Extension Program which created an electronic and interactive bridge where farmers, fishers, and other stakeholders meet and transact to enhance knowledge, productivity, profitability, and global competitiveness. From five courses, the e-learning component is now offering 55 courses with more partner institutions from the government and state universities and colleges across the country. A total of 8,469 e-Learners have enrolled in various e-Learning courses, with 7,096 of these successfully completing and graduating the courses they enrolled in. The top two courses with the highest number of graduates in 2017 were the Online Course on Basic Urban Gardening (900 graduates) and "Walay Aray sa AI": Online Course on Artificial Insemination in Pigs (511 graduates).

Likewise, to provide farming and business advisory services in e-extension, ATI launched

the Farmers' Contact Center (FCC) in 2009 with subject matter specialists from different government agencies under the DA. More than 27,000 queries on agriculture and fisheries technology were answered by the FCC, while 101 techno-tip broadcasts were sent to a total of 538,646 recipients touching on topics such as agriculture and fisheries technologies and updates on the latest activities in extension.

Another component of the e-Extension Program, the e-trading, piloted FilFARM or the *Filipino Farmers Are Ready to Market* which will provide avenues for farmers to sell their products. FilFARM is currently in the pilot stage to ensure a secured system for an online transaction between farmers and consumers in the country.

Meanwhile, as an alternative venue to showcase extension interventions, actual learning experiences, hands-on practices, farm demonstrations, and farm technologies used for efficient farm operations, the establishment of learning sites continued to be supported by ATI. These are also ideal job training sites for

students of ladderized courses in agricultural entrepreneurship, complementing the classroom training of ATI. As of 2017, there are 346 certified Learning Sites in the country, while 100 farms are currently complying with documentary requirements for certification.

Increasing the competitiveness of the country's farming sector is also premised on how quickly and effectively farmers are updated on the latest agricultural technologies. The ever-changing, complex, and competitive rice production environment, in particular, has triggered the need to rejuvenate how extension services and information on rice farming practices are transmitted on the ground. ATI, in collaboration with PhilRice and IRRI, answered this call by training a new breed of rice extensionists as AgRI Document Officers in the Community (AgRIDOCs) competent on science-based and locally appropriate strategies for managing and adapting rice-based farming systems. As agents of farm community transformation, AgRIDOCs were trained not only on theories in agriculture, but also in its application, spurring the rice extension worker's passion for agriculture and rice science.

In 2017, 21 AgRIDOC trainings were conducted serving 618 clients. Those who graduated from the season-long program are now equipped to conduct research, develop agriculture enterprise, manage, network, and do extension in their own communities.

Further, in support to the efforts on food production, ATI continues to promote urban gardening or backyard gardening which capacitates communities – whether in cities or rural areas – to replicate methods and technologies on gardening and edible landscaping. For 2017, 57 activities were conducted serving 2,806 beneficiaries. Some of these activities were training on urban agriculture, kitchen composting, edible landscaping, mushroom production, mango production and processing, poultry production

and processing, and swine production and meat processing, among others. Four street caravans on gardening or edible landscaping were also carried out, covering 230 individuals.

Further, the NRP conducts National Rice Technology Forums (NRTF) to bring modern rice technologies to farmers through showcase of performance and production capacities of location-specific rice varieties. This is a season-long activity which includes field visits by farmers complemented with lecture discussions, among others. The NRP, in partnership with the Rice Board, the DA RFOs, and LGUs, established two technology demonstration farms: one for the dry season last March 8-10, 2017 in M'Lang, Cotabato, and one for the wet season conducted last September 20-22, 2017 which was dubbed as the Hybrid Rice Derby in Basey, Samar.

Extension and training support for the fisheries sector is also a major service provided by the BFAR, covering topics on various fishery technologies on aquaculture, capture fisheries and postharvest. These activities not only educate fisherfolk and develop the human resource to uplift the industry but likewise serve to strengthen partnership both with the LGUs and other stakeholders. In 2017, a total of 1,483 training courses on aquaculture (tilapia, bangus, and seaweeds), municipal, regulatory, and postharvest technologies were conducted for 43,086 participants.

In addition, 2,805 technology demonstration projects showcasing different fishery technologies (such as seaweed farming, integrated farming, aquasilvi/ mangrove culture, and shellfish culture, among others) were established by BFAR for the benefit of 579 groups/ associations and 2,896 individual fisherfolk and other stakeholders.

Research and Development

Mandated to ensure that all agricultural research are coordinated and undertaken for maximum utility to agriculture, the Bureau of Agricultural Research (BAR) remains steadfast in strengthening agricultural and fishery R&D for more than three decades to bring relevant research results towards the creation of opportunities for livelihood, profit, and income. The Bureau has also been at the vanguard of the consolidation and orchestration of the National Research and Development System for Agriculture and Fisheries (NaRDSAF) since its creation in 1987.

BAR's support for R&D is ensuring that farmers, fishers, and other stakeholders are regularly updated with the latest technologies and interventions that will make their lives better and easier. Thus, BAR conducts the Agriculture and Fisheries Technology Forum and Product Exhibition (NTF) every August and the National Research Symposium (NRS) every October.

A. Agriculture and Fisheries Technology Forum and Product Exhibition (NTF)

The NTF is the annual showcase of viable technologies developed by SUCs, the DA national and regional offices, and other R&D partner-institutions. The event also becomes a valuable avenue for R&D institutions to collaborate with the private sector on the wider promotion and dissemination of information and technologies generated and to create a viable agribusiness enterprise. Further, the event is organized as a way to promote the technologies generated under the National Technology Commercialization Program (NTCP).

The NTCP, meanwhile, highlights both emerging and mature technologies generated and developed by various R&D institutions, with emphasis on the efficient transfer of these to marginalized farmers

and fisherfolk to aid in increased productivity and income. For CY 2017, a total of 33 technology commercialization projects have been funded.

The NTCP also complements the Community-based Participatory Action Research (CPAR) since it serves as the entry point of technology commercialization (through on-farm technology demonstration) and assessment arena for potential suitable technologies for the communities. CPAR, as a research modality, is designed to generate significant information by verifying technical effectiveness and economic feasibility of technologies prior to widespread adoption. A unique aspect of this type of research is that it actively involves the target beneficiary (farmers/ fisherfolk) of the techno-demo site in the planning process and implementation to ensure that feedback is more realistic or authentic. This ensures that technologies to be adopted are tested by the ultimate users and beneficiaries and that there is focus on the farmer and community's overall management of production system.

Moreover, CPAR serves as grounds for incubation or fermentation of technologies being tested or assessed for further enhancement/ refinement until a more strategic and competitive business model is achieved. Attention is given to the strengthening of a market-driven approach for a holistic and integrated development.

CPAR is spearheaded by BAR in partnership with the 16 Regional Integrated Agricultural Research Centers (RIARCs)/ Regional Fisheries Research and Development Centers (RFRDCs), the ATI, and LGUs. LGUs, in particular, take the lead role in project implementation including activities such as strengthening of farmers' organizations through capability building

trainings. For 2017, BAR has coordinated a total of 14 CPAR projects (4 new and 10 continuing) and to date has assisted some 13,669 farmer cooperators and adopters.

B. National Research Symposium (NRS)

The NRS, on the other hand, is a yearly competition featuring R&D paper entries from researchers and scientists from different R&D institutions throughout the country while recognizing the vital role of researchers as catalyst for developing R&D that matters to the sector. In 2017, the best AFMA R&D Papers were:

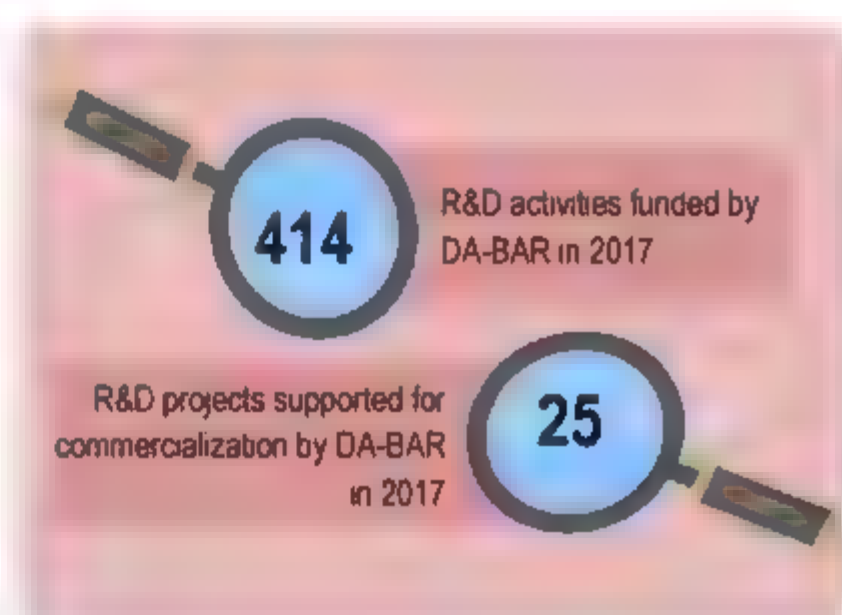
- **Basic Research:** "Screening and Characterization of Stress Tolerant Yeasts in Nipa Sap Fermentation from Cagayan and Quezon Provinces, Philippines," by James Paul T. Madigal and Shirley Agrupis of the Mariano Marcos State University;
- **Applied Research - TG/IG (Technology/ Information Generation) – Agriculture and Best Poster:** "Development and Characterization of Gamma-Amino Butyric Acid (GABA) Rice from Selected Philippine Cultivars," by Rodel M. Bulatao, Marissa V. Romero, Maricar B. Castillo, and John Paulo A. Samin from PhilRice;
- **Applied Research - TA/TV (Technology Adaptation/ Verification) – Agriculture:** "Development, Evaluation and Commercialization of Village-Level Compact Corn Mill," by Michael A. Gragasín, Jayvee P. Ilustrisimo, and Dr. Romualdo C. Martinez from PHILMECH;
- **Development Research:** "Community-based Participatory Action Research on Integrated Farming Systems in Cebu Province," by Joseph E. Dela Cerna, Virgilio A. Jakosalem, Victor V. Geralde, Marya Zea A. Villaganas, Ma. Ritchille C.

Putong, Kathryn N. Ylanan, and Fabio G. Enriquez from the Cebu Office of the Provincial Agriculturist and DA Central Visayas;

- **Socio-Economic Research Category:** "Intensified Rice-based Agri-bio System Model for Hillyland," by Erwin G. Labadan, Cherlie A. Simene, Decheryvie G. Payla, and Clotilde B. Jumalon from DA Northern Mindanao

Through the years, the NRS has served as a venue to disseminate new technologies and knowledge that support agriculture and fisheries modernization.

In 2017, the Department has funded various R&D activities for specific commodities.



Under the Rice Program, 50 R&D activities have been funded by BAR in 2017. Currently, there are 111 completed projects under the Bureau's Rice Program, while 78 projects are on-going.

Meanwhile, the DA's National Rice Program is working with IRRI in implementing the Rice Crop Manager (RCM). This tool, which is a collaboration project of the PhilRice and IRRI, aids farmers in getting customized advice on crop and nutrient management.

RCM provides recommendations to farmers via short message service (SMS) and other IEC materials to improve and guide crop

management. The RCM was developed as an enhancement of the Nutrient Manager for rice combining improved nutrient management with field-specific “best bet” rice management practices to promote “modern precision farming”, with the overall aim of increasing farmer income per hectare per crop.

Location-specific recommendations were provided to farmers before the start of the growing season to enable them to invest and plan wisely for inputs and management of their rice crop. As of 2017, a total of 33,594 farmers and 59,856 fields have been registered using the RCM Farmer and Field Registration. Within the year, some 345,075 RCM recommendations were generated, providing service to 40,530 fields. A total of 216,925 SMS were sent.

To ensure that farmers are benefitting from these recommendations, recipients and fields

were monitored and validated on the ground. For the year, 10,343 verified farmers were monitored, while 22,949 fields (equivalent to 17,682.84 hectares) were verified. Figure 5 compares the grain yield per hectare over seven seasons from 2014-2017 using farmer’s practice and RCM recommendations. An average grain yield difference of 0.4 ton per hectare was noted from verified areas.

Another tool in support to policy formulation for the rice sector is the Philippine Rice Information System Management (PRISM), a collaborative program between the DA, PhilRice, IRRI, and Sarmap. The monitoring and information system being developed for rice-growing areas in the Philippines aims to gather season data and organize information on rice yield, yield gaps, and the causes of these gaps through Geographic Information System (GIS). The project relies on data from remote sensing,

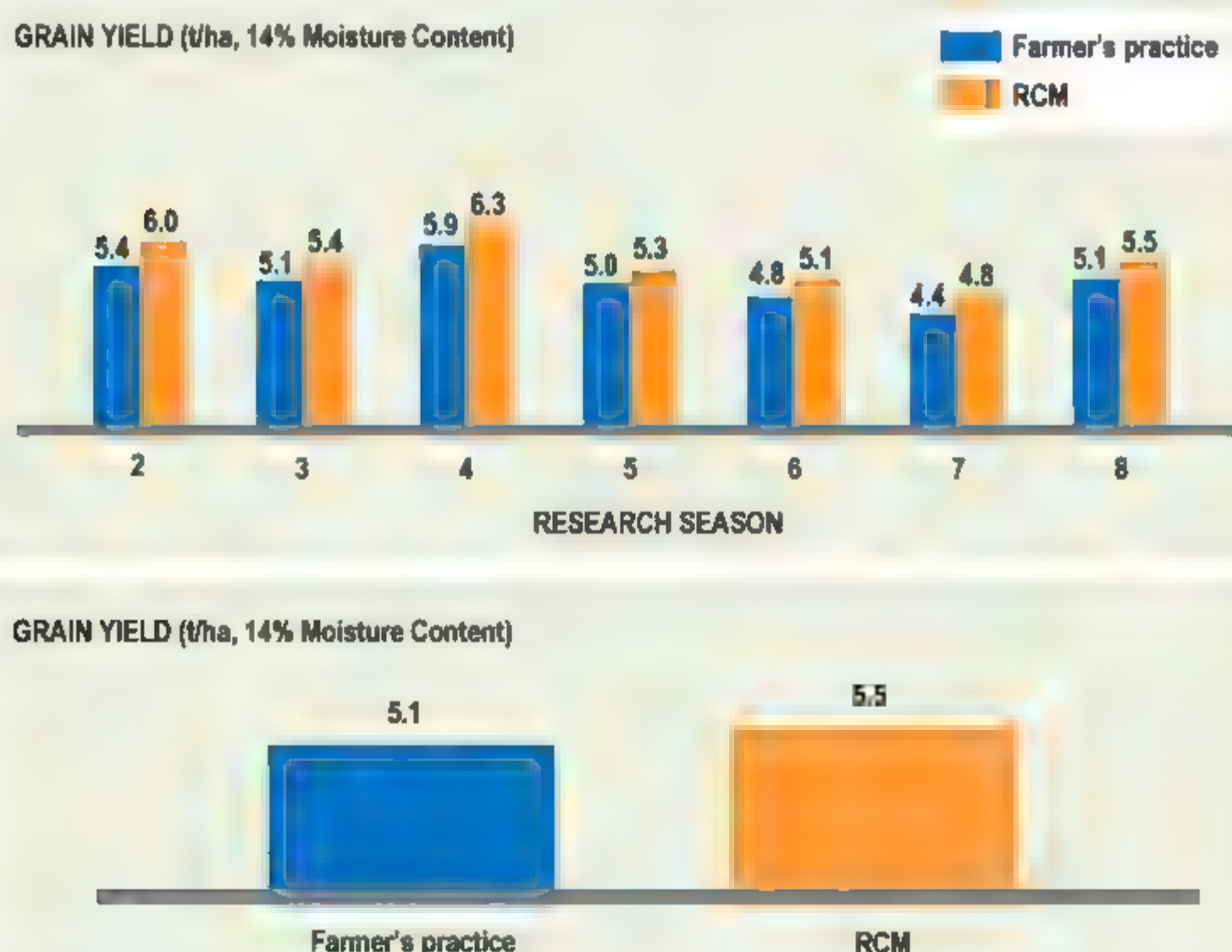


Figure 5. Comparison of grain yield between farmer's practice and researcher-managed use of RCM over 7 seasons (2014-2017). Average grain yield difference of 4t/ha. (Source: IRRI/ DA National Rice Program)

crop models, in-field crop surveys, and other fieldwork to deliver actionable information on rice crop seasonality, area, damage from flood, wind, or drought, and yield-reducing factors, such as diseases, animal pest, and weeds.

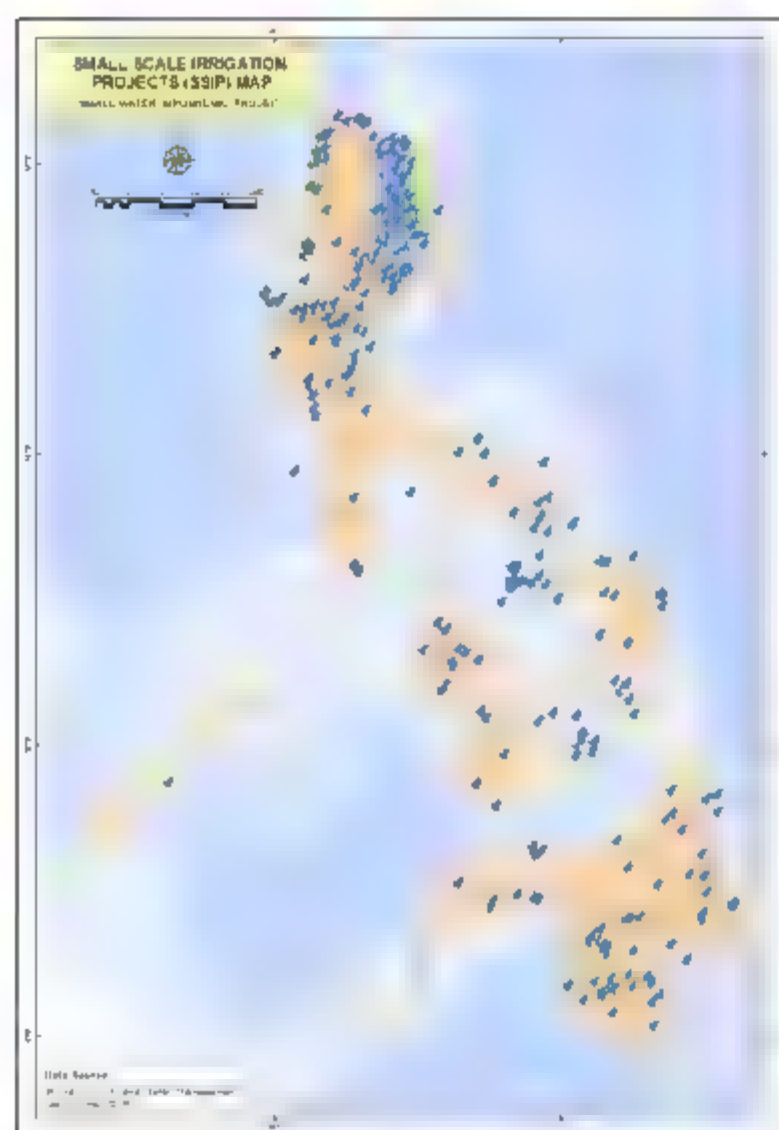


Figure 6. Sample map generated through the SSIPs Geodatabase.

For 2017, some of the accomplishments include the acquisition of 1,316 SAR (synthetic aperture radar) images; mapping of more than 3 million hectares of rice areas; generation of six flood assessments (relative to typhoons Nina and Jolina, tropical depressions Auring and Maring, tropical storm Salome, and flooding due to the tail-end of cold front). In addition, 34 trainings and workshops have been conducted participated in by 1,026 participants.

A component of PRISM with active involvement of the Bureau of Soils and Water Management (BSWM) is rice mapping and monitoring system. To facilitate this, the Bureau continues to build a geodatabase of small-scale irrigation projects in the Philippines. As of 2017, more than 1,700 additional records of small-water impounding projects (SWIPs), diversion dams, small farm reservoirs (SFRs), and pump irrigations have been incorporated in the database. Figure 6 shows a sample map generated from this database.

PhilRice, the lead agency for R4D (Research for Development) initiatives, develops rice science and technology, and generates information and other products through various programs, creating opportunities to improve the competitiveness of the Filipino rice farmer and the Philippine rice industry. Table 9 gives details on some of the technologies developed by PhilRice in 2017.

Table 9. Technologies Developed in 2017, PhilRice

Technologies developed:

Thirteen rice varieties approved by NSIC for commercial production

A total of 13 (3 inbred and 10 hybrid) rice varieties were developed and approved by the National Seed Industry Council (NSIC) for commercial production. These new varieties have higher yields, better grain quality, and resistance against major pests and diseases than existing varieties. (See Appendix B).

The breeder seeds of the three approved inbred varieties (Japonica 5, Japonica 6, and Malagkit 6) will be planted by PhilRice and are expected to be harvested and processed by December 2018 as foundation seeds. These foundation seeds will then be made available to seed growers by the 2019 Dry Season for planting/multiplication. Registered seeds will thus be made available to farmers by the 2019 Wet Season and the 2020 Dry Season.

Table 9. Technologies Developed in 2017, PhilRice

Technologies developed:

Value-adding technology products developed

a. *GABA Rice for the Functional Food and Pharmaceutical Industries.*

Two prototype products - instant GABA (gamma-amino butyric acid) rice congee and instant GABA rice chocolate drink - were developed. The developed GABA rice from NSIC Rc160 is a good source of protein, dietary fiber, carbohydrates, calcium, iron, and sodium. It also had high consumer acceptability in both raw and cooked forms; and is safe for consumption as shown by acceptable microbial counts. Regardless of packaging materials and storage temperatures, GABA rice is fit for consumption even after two months of storage.

The GABA rice drink ("NutriRice Milk") is now being sold in PCC's Milka Krem. Orders can also be placed thru PCC and PhilRice.

b. *Prebiotics from Rice: Dietary Fiber and Resistant Starch*

Highly acceptable and nutritious fiber-enriched noodles could be supplemented with rice bran. Enriching the noodles with 10 percent of Minaangan and NSIC Rc298 increased the fiber content of 11.16 percent and 8.82 percent, respectively.

Four machines developed with promising performance (for pilot-testing by 2019) and three machines at pilot-testing level (for commercialization by the end of 2019)

- For pilot-testing by 2019:

a. *Stripper combine harvester*

Two field tests gave an average actual field capacity of 1.02 ha/day and an average field efficiency of 54.15 percent, with average grain losses at only 7.8 percent. These were affected by factors such as variety of rice, crop height, operating speed, width of cut, shape and size of the field, crop and field conditions, and the skill of the operator.

b. *Riding boat tiller*

The overall weight of the second prototype increased by 50 kilograms due to the added new features. Improvements are being made on the following parts: adjustable operator's seat, outrigger adjustment, positioning of lever controls, weight reduction of rotor and transmission, and inclusion of plastic floater

- For commercialization in 2019:

a. *Ricehull Gasifier-Engine Pump System*

Two models (RHGEPS-1 and RHGEPS-2) of the system were pilot-tested in one dry season cropping. Three units were fabricated by the accredited manufacturer. RHGEPS-2 was pilot-tested in PhilRice Mindoro; RHGEPS-1 in PhilRice Batac and PhilRice CES-FutureRice Farm. The design of the system was standard in all units pilot-tested.

b. *MP Seeder and Reduced Planter*

Seven on-farm demonstrations have been established to observe differences between MP seeder (mechanized) and farmer's practice in terms of seeding rates, timing of fertilizer application, and fertilizer added.

Table 9. Technologies Developed in 2017, PhilRice

Technologies developed:

c. *Riding-type Transplanter*

A pilot-test unit was completed; a manufacturer has signified interest to fabricate and assemble it.

d. *Brown rice machines*

Two prototypes developed - pedal-type and motor-driven - were tested for evaluation and improvement. The pedal-type prototype was more refined, produced 360g of brown rice from 500g paddy in 8 minutes of operation that gave about 72% recovery after two passes. The second prototype of the motor-driven model is being completed

Research and development activities funded by BAR under the Corn Program in 2017 reached 83 comprising of applied and CPAR-related researches. As of December 2017, there were a total of 113 completed projects. One of the technologies that have been developed before and was commercialized is the use of Streptomycin sulfate as antibiotic pre-planting treatment to control the Cassava Phytoplasma Disease (CPD). The technology was based on the study conducted by Dr. Erlinda Vasquez from the PhilRootcrops – Visayas State University on *Management of Cassava Phytoplasma Disease: Survey, Diagnosis, Characterization, and Control*. DA RFOs are already utilizing the technology as a preventive measure to control the spread of CPD, while VERCA CORPORATION has been accredited by the Fertilizer and Pesticide Authority (FPA) to be the National Distributor of streptomycin.

Another technology that has been commercialized from past completed projects is the *Site-Specific Nutrient Management (SSNM) Nutrient Expert* which was found to increase the yield and profit of corn farmers to 7 tons/hectare and Php58,105, respectively, compared with Farmers' Practice which yields 5 tons/hectare and a profit of Php 35,125. The SSNM-NE is also being adopted by farmer-beneficiaries through CPAR projects while the DA National Corn Program has likewise provided funding support on the adoption of

this technology in corn-producing areas of majority of the regions.

Another R&D project under the Corn Program is the *Corn Germplasm Utilization through Advanced Research and Development (CGUARD) Program* which explores uncollected native corn varieties nationwide while preserving and characterizing the germplasm collection for agronomic response to different environmental stresses. As of 2017, the collection consists of 2,403 native maize populations nationwide. A total of 43 CGUARD native maize populations were found to be resistant/ tolerant to the biotic and abiotic stresses such as Philippine downy mildew (5); Bacterial stalk rot (2); Fusarium ear rot (1); Asian Corn Borer (5); Corn weevil (2); drought (10); waterlogging (6); Acidic soil (10); and calcareous soil (12). Native varieties with outstanding performance were identified as follows: UPLB Cn N15 for downy mildew resistance, UPLB Cn N42 for corn borer resistance, UPLB Cn N34 for lysine content, and UPLB Cn N48 for earliness/ early maturity.

Further studies will be carried out to effectively and efficiently identify cross combinations in order to broaden genetic based and eventually come up with inbreds for hybrid development.

BAR likewise supports the development and promotion of package of technologies for various priority high-value commodities. In

2017, 91 R&D projects were funded by BAR. To date, 62 technologies have been commercialized under HVCDP which notably include the following:

- (a) Production and processing of premium quality coffee liqueur and packaging development for the niche high-end market (DA-Quezon Agricultural Experiment Station);
- (b) *Pinoy Gourmix* in Cagayan Valley;
- (c) Expanded soybean production development program in Cagayan Valley;
- (d) Development of commercial organic soybeans in Central Luzon; and
- (e) Utilization and promotion of developed postharvest technologies for sustainable community-based coffee processing enterprise (PHilMech)

PhilFIDA also conducts research studies on abaca, cotton, and other fibercrops to propagate disease-free high-yielding varieties (HYVs), as well as researches on the design, development, or improvement of cost-efficient fiber machineries to address problems on low productivity, increase fiber production, and improve fiber quality for global competitiveness. In 2017, PhilFIDA conducted 39 fibercrop researches which are now at various stages of implementation. Meanwhile, the result of one completed study on the *Field Evaluation of Tissue-Cultured Abaca Variety Tex 51 from Different Sub-cultures* has been disseminated and is being used by farmers in the Bicol region. The *Testing and Evaluation of a Handheld Battery-Operated Cotton Harvesting Machine Device* has also been completed and will undergo field dissemination with PhilFIDA assisting interested farmers to be linked with the provider.

Meanwhile, under the Organic Agriculture Program, BAR funded a total of 30 R&D activities composed of 19 applied research, nine production and post-production technologies for commercialization, and assistance for the establishment two RDE (Research, Development and Extension) Facilities.

One ongoing R&D project under OA since CY 2015, *Development of Natural Source as Alternative to Synthetic Methionine for Native Chicken Organic Supplemental Feed Production*, has successfully developed feed formulation using locally available, organically-produced materials. Based on the trials, the native chicken was able to weigh at par with conventionally-raised ones. BAR's documentation team produced three episodes based on the project's accomplishments focusing on (1) Organic Chicken Production, (2) Breeding of Native Chickens, and (3) Organic Feeds Production. Each episode demonstrates the Dos and Don'ts in organic chicken production, step-by-step breeding practices, the appropriate feed sources, and procedure in organic feed formulation.

To date, there have been 20 projects commercialized under Organic Agriculture through the NTCP, such as:

- (a) Promotion of the Package of Technology for biocontrol of major diseases of high-value crops in Benguet;
- (b) Organic vegetable production technology adoption and promotion in lahar-affected areas; and
- (c) Expansion of beekeeping technologies in support to OA in Visayas and Mindanao

Going beyond the usual R&D concept, the PCC is now also actively pursuing the R4D initiative to improve further the attainment of its goals in conserving and propagating carabao as a source of draft animal power, meat, milk, and hide, in order to reach the ultimate aim of establishing

profitable and sustainable buffalo-based enterprises for the benefit of rural farmers. Many of PCC's researches have applied concepts and methodologies in biotechnology. In 2017, 26 researches were completed while another 70 were still being conducted. These researches cover thematic areas such as production management systems, biosafety, genetic resource utilization, product development, and technology transfer, among others.

Recognizing the need to address the challenges and threats of climate change to agricultural productivity, the BAR came up with the Climate Change Research, Development and Extension Agenda and Program (CCRDEAP) for Agriculture and Fisheries in 2011. The agenda follows the policy thrust of the DA-Systems Wide Climate Change Program which is anchored on two pillars: mitigation and adaptation, with adaptation as the anchor strategy and mitigation measures as a function of adaptation.

To engage the science sector, specifically researchers, in developing effective strategies to address climate change and other weather-related disasters, BAR continues to work closely with other DA Operating Units and SUCs to put theories into practice in properly optimizing the potentials of technologies generated from research. This is also to empower farmers and fisherfolks by providing them with the appropriate resources and technical knowledge in coping and adapting with the anticipated impacts of climate change. For CY 2017, BAR funded 30 climate change-related projects. In addition, as of December 2017, 82 projects have been coordinated under the program for the period 2011-2017. Of these, 37 projects are on-going and 45 were already completed.

Fisheries research also remains crucial in the development, management, conservation, and protection of the country's fisheries and aquatic resources. To this end, BFAR's National Fisheries Research and Development Institute (NFRDI) was created not only to explore

fisheries resource management and utilization, but also carry out socio-economic studies that seek to understand the relationship of resource users (particularly municipal fisherfolk) with the utilization of fisheries resources, and how economic benefits are shared within the sector. In 2017, 10 researches have been completed by the NFRDI while 42 are on-going. On the other hand, the M/V DA BFAR Marine Fisheries Management, Research, Training and Oceanographic Vessel conducted 10 research explorations for the year for fisheries stock assessments and oceanographic surveys.

Farm-to-Market Road Network Services

Farm-to-Market Roads (FMR) are essential in the value chain for the promotion of agriculture-related activities and the efficient transport of agricultural produce within and outside production areas, contributing to the increase in farm incomes due to reduced transport costs and postharvest losses. The construction and rehabilitation or repair of FMRs located within key production areas continue to be coordinated by the DA with the Department of Public Works and Highways (DPWH), including the identification of priority sites.

From 2014 to 2017, a total of Php 44.27 billion was allocated for FMRs under the Farm-to-Market Road Development Program (FMRDP). As of 2017, 3,044 kilometers of concrete and climate-resilient roads have been built (Table 10).

FMR construction is also a component of several special projects. For instance, under Locally-Funded Projects (LFPs), total constructed FMRs as of 2017 has reached 391.70 kilometers; while Foreign-Assisted Projects (FAPs) have built an estimated 2,072 kilometers as of December 2017.

Table 10. Length of Farm-to-Market Roads Constructed/ Rehabilitated as of 2017

| Projects | Completed Length as of 2017 (km) | Remarks |
|--|----------------------------------|---------------------------------|
| FMRDP | 3,044 | CY 2014 to 2017 projects |
| Foreign-Assisted Projects (FAPs) | 2,072 | |
| Cordillera Highland Agricultural Resource Management Project (CHARMP 2) | 389.38 | completed from 2013-2017 |
| Support to Emergency and Livelihood Assistance Project (SELAP 2) | 60.75 | completed from 2013-2016 |
| Infrastructure for Rural Productivity Enhancement Sector (InfRES) | 260.68 | completed from 2011-2012 |
| Mindanao Rural Development Program (MRDP 2) | 1,176.47 | completed from 2010-2014 |
| Philippine Rural Development Project (PRDP) | 184.72 | completed from 2015-2017 |
| Locally-Funded Projects (LFPs) | 391.7 | |
| SOCOSKARGEN | 164.5 | completed from 2010-2017 |
| Quirino Casecan Social Measures Project (CSMP) | 68.9 | completed from 2010-2017 |
| Nueva Vizcaya CSMP | 10.56 | completed in 2016 |
| Davao Integrated Development Program (DIDP) | 78.78 | completed from 2010-2014 |
| Zamboanga Peninsula and Basilan Province Integrated Agricultural Development Program (ZIADP) | 34.12 | completed from 2010-2013 |
| Caraga Integrated Development Project (CIDP) | 28.28 | completed from 2011-2012 |
| Mindanao North Coast Integrated Area Development Project (MNCIADP) | 6.56 | completed in 2011 |

Source: DA-FMRDP and DA-SPCMAD

Agricultural Equipment and Facilities Support Services

Improving agricultural productivity goes hand-in-hand with raising the level of farm mechanization. This is one of the major endeavors of the DA so that Philippine agriculture attains competitiveness comparable to those among our Asian neighbors.

The enactment of RA 10601 in 2013, known as the Agriculture and Fisheries Mechanization (AFMech) Law, mandated the Philippine Center for Postharvest Development and Mechanization (PHilMech) to coordinate, plan, and execute agricultural and fishery mechanization and postharvest research, development, and extension programs and projects. The AFMech Law also declares the policy of the State to promote local assembling and manufacturing of engines, machinery, and equipment for agricultural and fisheries production, processing, and marketing. This is in response to the tendency of the country to

import its machinery needs, most of which were then found to be incompatible or not well-adapted to local conditions (i.e., small farm size). In addition to high cost of acquisition, some of these imported machineries entail significant maintenance expenses.

Thus, one of PHilMech's strategies is focusing its R&D activities towards the development of appropriate mechanization that is also tailor-fit to the local farm context for increased resource use efficiency and productivity. Such strategy will likewise enhance the capabilities of local postharvest machine and equipment manufacturers.

In 2017, PHilMech developed 17 technologies comprising of five hardwares, two products, three processes, and seven information technologies. Examples of these are:

- 10-row Onion Mechanized Seeder (10-ROMS) – designed for efficient seed distribution and maximized plant density

per unit area (compared to manual broadcasting of seeds or the use of a 2-row mechanical seeder);

- Thermochemical Conversion Machine – for conversion of renewable biomass feedstock to useful fuels and chemicals;
- Kitchen Top Brown Rice Huller – can be used by households so that they can produce their brown rice requirement right at home with a two-week shelf life (as brown rice starts to deteriorate three weeks after milling);
- Pre-Cleaner and Elevator of PHILMECH Compact Corn Mill - efficiently removes corn grains from cobs (lessening presence of cobs that clogs degerminators during milling) and provides an alternative to the traditional drying along highways (preventing the inclusion of tiny stones with the corn grains that damages the screen of the degerminator);
- Cacao Shell-Based Briquettes – environment-friendly fuel briquettes sufficient to resist impact during handling and transport, and able to produce the required heat for domestic cooking and industrial applications; as a soil amendment, it has a high amount of dry matter carbon content, reducing use of fertilizer and water needs and the resulting pollution caused by run-off from synthetic fertilizers;
- Postharvest Treatment using Ethanol Vapor – this can delay rapid senescence of tomato (leading to ripening of fruit) during transit and in storage. This will help small farmers increase their income by reducing postharvest losses. Utilizing this process was calculated to extend the shelf life of cherry tomato from 27 to 40 days.

The AFMech Law likewise mandated the formulation of the National Agricultural and Fishery Mechanization Program (NAFMP) which will serve as the mechanization development blueprint for the next six years. The NAFMP was thus formulated using participatory methods and close linkages with all stakeholders throughout the planning cycle, and approved by the DA Secretary in April 2017. The objectives of the Program are to:

1. Promote and support the local development and manufacture of agricultural and fisheries (A&F) machinery by the private sector through the provision of research grants, credit, and transparent and predictable regulation;
2. Unify, lead, and support the efforts of various institutions in the research, design, and development of A&F machinery;
3. Establish quality, safety, and performance standards for A&F machinery;
4. Support the establishment of quality, safety, and performance testing centers for the certification of A&F machinery in strategic localities in the country;
5. Establish guidelines for the registration of ownership of A&F machinery; and
6. Promote the adoption of certified A&F machinery for improving productivity.

The fourth objective in particular is in consonance with Section 18 of the AFMech Law requiring the testing and evaluation of all A&F machinery and equipment to be sold in the market, including any modification thereof, by the Agricultural Machinery Testing and Evaluation Center (AMTEC). The AMTEC test requirement had initially affected the programmed procurement and distribution of farm and postharvest machinery and equipment in the past years due to limited

Agri Equipment & Facilities Support Services for Crops, Livestock and Poultry, and Organic Agriculture

Beneficiaries of production and postharvest machinery, equipment, and facilities



387
Individuals



7,023
Groups



6,586
Production-related machinery and equipment distributed



352
Production facilities established



19,057
Postharvest machinery and equipment distributed



339
Postharvest facilities established

accredited testing centers. To address this, the DA issued Department Circular Nos. 4 and 5 (*Accreditation Guidelines for Agricultural and Fisheries Machinery Testing Centers* and *National Guidelines on Testing and Evaluation of Agricultural and Fisheries Machinery*, respectively) which paved the way for the conduct of a series of meetings and advocacy campaigns with NGAs and RFOs, as well as refresher courses on testing and evaluation of A&F machinery. One hundred and eleven (111) applications were also processed for the accreditation of test engineers, with 34 Test Engineers issued with certification.

For the year, DA provided and turned-over farm production-related and postharvest machinery, equipment, and facilities to more than 7,000 farmer groups/ associations and 387 individual

farmers. A total of 6,586 units of production machinery and equipment, 19,057 units of postharvest machinery and equipment, 352 production facilities, and 339 postharvest facilities were distributed/ turned-over to these recipients.

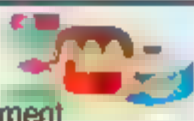
Reducing postharvest losses in fish catch is also a core focus of the BFAR, as this affects 20-40 percent of catch volume, which, in turn, reduces both the monetary and nutritional value, as well as safety of fish for consumption. For 2017, 1,196 units of postharvest equipment were distributed to 946 fisherfolk individuals and 190 associations/ groups.

Meanwhile, 25 units of Community Fish Landing Centers (CFLCs) have been completed in 2017 as part of BFAR's Targeted Actions to

Fisheries and Aquaculture Postharvest & Other Infrastructure Support

1,196

Postharvest equipment distributed



Beneficiaries:



946
Individuals



190
Groups

293

Community Fish Landing Centers constructed as of 2017



214

CFLCs turned-over to LGUs



8 Regional Fish Ports operated

402,439 MT Volume of fish unloaded in RFPs

117 Municipal Fish Ports constructed as of 2017

Reduce Poverty and Generate Economic Transformation in the Fisheries Sector (TARGET) Program. To date, 293 units of CFLCs have been constructed (comprising 40 percent of the 725 units approved for implementation from FY 2015 to 2017); of these, 214 units were already turned-over to LGUs.

Improving efficiency in the handling and distribution of fish and fishery products in order to enhance their quality and, ultimately, contribute to the competitiveness of the sector, is the vision that drives the PFDA in the implementation of its major programs. These are the: (1) Regional Fish Ports Program, (2) Municipal Fish Ports Program, and (3) Ice Plants and Cold Storages Program, all designed to aid in addressing the needs of the sector for postharvest facilities and services.

Currently, PFDA manages eight fish port complexes in Navotas, Sual, Lucena, Camaligan, Iloilo, Davao, Zamboanga, and General Santos. The biggest among these are the Navotas Fish Port Complex (the premier fish center of the Philippines and one of the largest in Asia) and the General Santos Fish Port Complex (the operations of which was considered of great importance in the East Asia Growth Area for being the major fishing postharvest infrastructure in the Mindanao area). In 2017, the total volume of fish unloaded at these complexes reached 402,439 MT. More than 50 percent of this was handled by the General Santos Fish Port Complex, followed by the Navotas Fish Port Complex (31 percent).

Meanwhile, the Municipal Fish Port Program caters to the postharvest requirement of sustenance fisherfolk. It entails the provision of smaller fish landings and market facilities in selected fishing communities nationwide, some of which act as satellite ports for the regional fish ports. To date, PFDA constructed 117 fish ports nationwide. The only fish port jointly managed by PFDA and an LGU is the Tacloban City Fish Port in Leyte.

The Ice Plants and Cold Storage (IPCS) program, on the other hand, helps satisfy the ice requirements of the fishing industry. It involves the provision of ice making machines of different magnitudes and cold storages of varying capacities. In line with the government's privatization scheme, PFDA continued to lease out four ice plants and cold storages to the private sector located in the provinces of Masbate, Negros Occidental, Sultan Kudarat and Surigao del Norte. To date, 10 IPCSs have been established and are for turn-over to LGUs.

The National Meat Inspection Service (NMIS) also managed infrastructure projects to assist LGUs in the rehabilitation or establishment of slaughterhouses or poultry dressing plants. The Meat Establishment Improvement Program (MEIP) assists LGUs through a 50:50 counterpart funding to rehabilitate and/ or complete their existing slaughterhouses and poultry dressing plants to be compliant with class "AA" requirements. To date, 43 projects have been completed (21 in Luzon, 5 in Visayas, and 17 in Mindanao). Meanwhile, the Small-Scale Meat Establishment Program (SSMEP), which is a Php3 million full grant to qualified LGUs in third to sixth class municipalities (particularly those in the poorest countries), was designed to aid them in the construction of slaughterhouses that conform with NMIS meat hygiene and meat safety standards. Currently, 14 LGU recipients have been identified to be assisted under the SSMEP.

One of the activities that DA continues to carry out to enhance awareness on the effectiveness of using modern agricultural machineries and bring farmers closer to the latest mechanization technologies is the Makina Expo. In 2017, the 5th Expo was simultaneously held at the Iloilo Convention Center (ICC) and the Western Visayas Integrated Agricultural Research Center (WESVIARC) in Hamungaya, Jaro, Iloilo City from September 7-9, 2017. The event showcased the latest production, postharvest,

and processing machinery and equipment for crops, livestock, fishery, and irrigation technologies by 65 exhibitors (e.g., field demonstrations of tractors, transplanters, rice combine harvesters, and solar and pressurized irrigation systems, and proper repair and maintenance of engines), for the benefit of close to 3,000 farmers and LGU implementers in all regions of the country, DA national agencies/ bureaus/ offices, DA RFOs, and SUCs.

The *Makinadong Magsasaka* Program of the DA is another initiative in support of the vision of a modern farm mechanization for the Philippines where Farm Service Providers (FSP) organized among farmers and other landless farm workers are capacitated to provide the necessary mechanized farming operations to individual farmers. The FSPs are trained to competently operate, maintain, and repair farm machineries. The PhilMech, ATI, and the different DA RFOs, in collaboration with TESDA, DOLE, and agricultural machinery manufacturers and distributors, provide the necessary capacity building and competency assessment to the FSPs.

A major support program to the *Makinadong Magsasaka* is the *Magsasakang Mekaniko* being initiated by PhilMech. It aims to establish a core of competent and TESDA-certified farm mechanics from the ranks of farmers and rural labors that will provide timely repair works to farm machineries right at the farm and, at the same time, teach farmers minor troubleshooting and maintenance work.

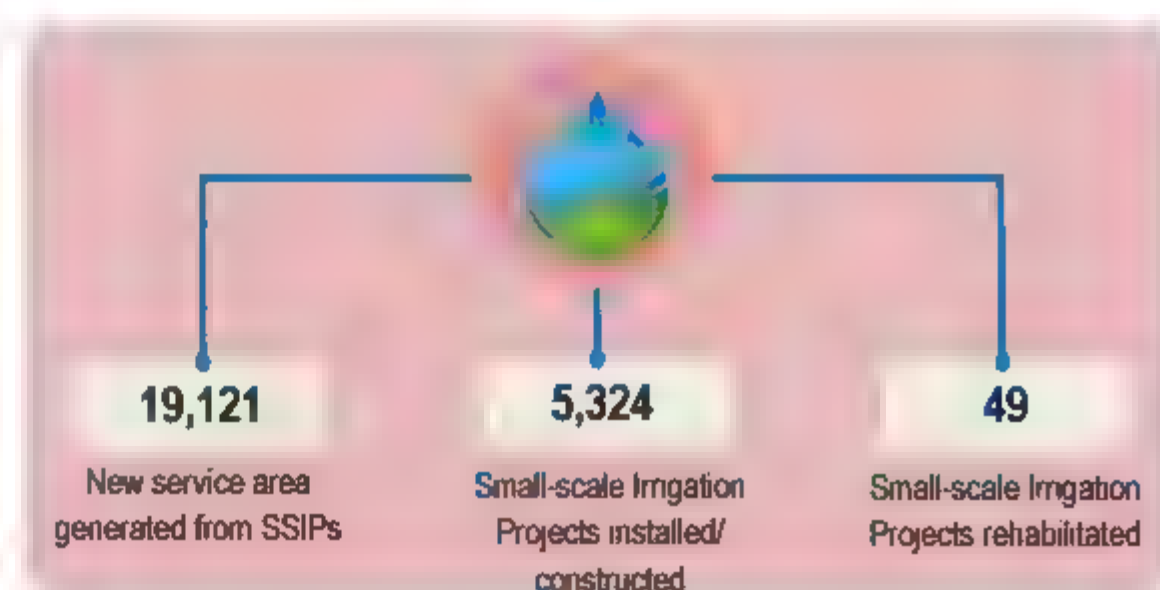
As of 2017, 108 FSPs have been established in 15 regions of the country, while a total of 380 farmers/ technicians were trained as mechanics of small farm engines by the collaborative efforts of PhilMech, DA RFOs, ATI, TESDA, and AMMDA. Of these trained individuals, 353 have

successfully been awarded the National Certification II (NC II) for small farm engine/ motorcycle by TESDA. The Program also targets to assist these certified graduates in establishing their livelihood related to the repair and maintenance of agricultural engines/ machines, eventually establishing and multiplying a critical mass of trained farmer mechanics in each barangay who can likewise serve as trainers.

To further empower farmers in the acquisition of farm machineries, the DA targets to launch in 2018 the Farm Machineries and Equipment Loan Program. With this credit facility, borrowers will have the option to select their preferred brand of machinery based on the DA's list of machinery packages eligible for financing, and has an interest loan rate of 6 percent per annum based on diminishing balance.

Irrigation Network Services

Irrigation is undeniably vital in any agricultural system. Sufficient water increases productivity while also providing stability in production particularly during the dry season as well as other extreme weather conditions. The DA continues the implementation of small-scale irrigation projects (SSIPs) through its RFOs and the BSWM. SSIPs provide not only supplemental irrigation for improved farm productivity in areas where large-scale irrigation systems are non-existent, but these also serve as source of



water for fishery and livestock production, for recharge of groundwater that contributes to the base flow of our rivers, moderate micro climate, and to arrest peak flows thereby preventing flash flooding downstream. From January to December 2017, a total of 5,324 SSIPs were installed/ constructed which generated an estimated 19,121 hectares of new service area.

Of this total area, 25 percent is located in Central Luzon, most of which, in turn, were generated for the benefit of its rice farmers. Meanwhile, 18 percent of the total service area generated was from the SSIPs installed/ constructed in Cagayan Valley for use of corn/ cassava farmers as well as vegetable growers.

The SSIPs installed/ constructed across the regions for the year include 39 units of diversion dams (DDs), 9 units of ram pumps, 2,621 units of shallow tube wells, 52 units of small farm reservoirs, 5 small water impounding projects (SWIPs), 75 spring development, and 20 units of wind pumps. There were also 49 SSIPs rehabilitated comprising of 15 units of DDs, 13 units of SWIPs, and 21 units of drilling rig and irrigation canal.

Cognizant of increasing high cost of energy (diesel and gasoline and electricity) for pumping water, the DA continues to explore the development of renewable energy sources such

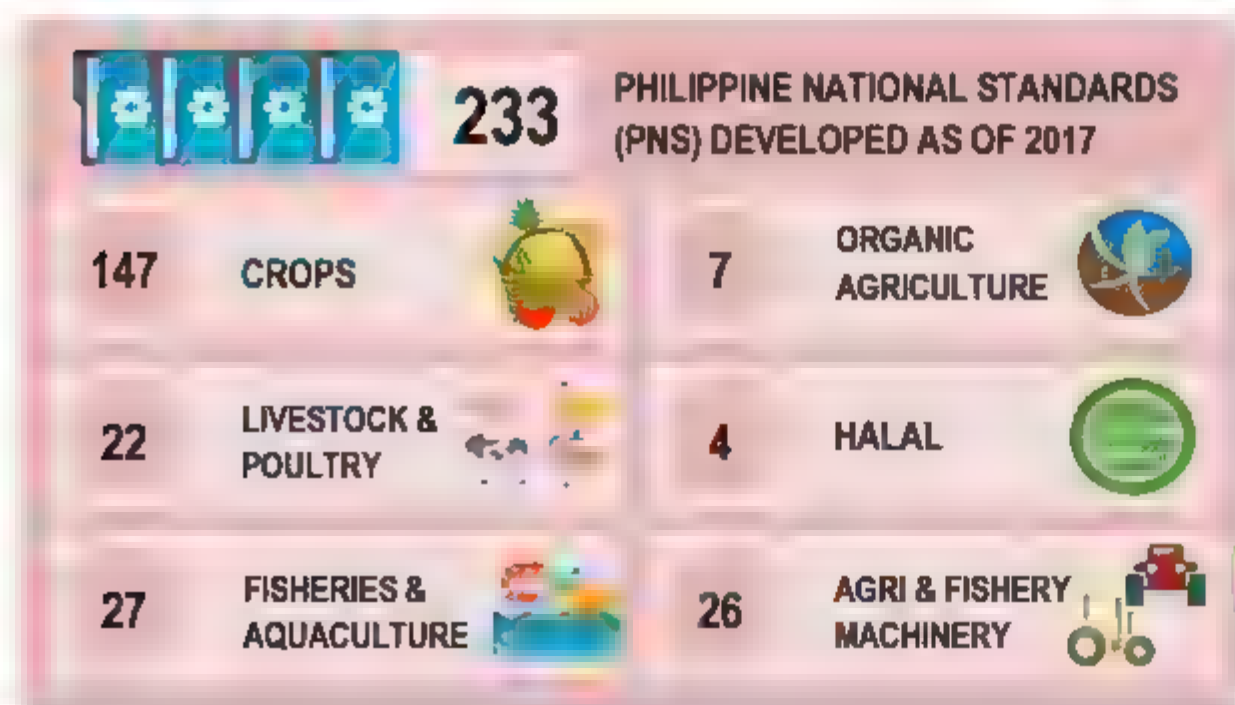
as wind, solar, and water flows as best and appropriate alternatives. In 2017, for instance, the DA launched the solar-powered irrigation system (SPIS) that can save farmers from spending on fuel or electricity otherwise needed when using shallow tube wells or other pump irrigation systems from an open source. The SPIS consists of solar panels, pump, electronic controls or a controller device to operate the pump, and, in some cases, other items like inverters, or batteries. The SPIS was formally launched by the President in North Cotabato in February 2017.

To harmonize the implementation of the SPIS, the BSWM, together with the DA Central Agriculture and Fishery Engineering Division (CAFED), crafted the SPIS Implementing Guidelines which was approved and signed by the Secretary in March 2017. By the end of the year, design work has been completed in 15 sites, while 14 units are in various stages of construction/ installation. For 2018, 100 more units are targeted to be implemented nationwide under the National Rice Program while 43 units will be funded under the National Corn Program.

Agricultural and Fishery Regulation Services

To ensure consumer safety and to promote a competitive agricultural and fisheries sector,

the processing, preservation, packaging, labeling, importation, exportation, distribution and advertising of fresh, primary, and secondary-processed agricultural and fisheries products must adhere to quality standards. Under DA's Bureau of Agricultural and Fisheries Standards (BAFS), standards are formulated and enforced, as well as harmonized with



internationally-accepted standards and practices.

From 2003 to 2016, BAFS developed 188 Philippine National Standards (PNS) covering fresh, primary, and postharvest agricultural and fisheries commodities; as well as agricultural and fisheries machinery, tools, and equipment. On the average, about 14 PNS have been developed yearly within that period. For 2017 alone, however, BAFS was able to develop 45 standards for agricultural and fisheries commodities, machinery, and equipment. This significant increase in the number of standards developed was due to the creation of a BAFS roadmap for its work priorities, specifically, a

Quality Procedure for Standards Development. For 2018, the Bureau targets to develop 43 PNS (22 Food Safety-related and 21 Quality-related).

DA's regulatory agencies – the Bureau of Animal Industry (BAI), National Meat Inspection Service (NMIS), Bureau of Plant Industry (BPI), and the Bureau of Fisheries and Aquatic Resources (BFAR) – continue to carry out critical services to ensure food safety from the production process, up to its processing, labeling, distribution, and sale, including those that enter the country. Regulatory activities are likewise being undertaken to comply with international standards and regulations of trading partners.

Agricultural Regulation Services



2,149,865

Regulatory documents issued



2,991

Agricultural products inspected



1,113

Agricultural facilities inspected

BPI Seed Quality Control Services



20,213

Areas inspected for seed/plant material certification

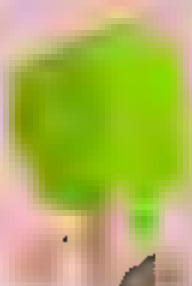
1,488,443

Seed bags tagged & sealed



1,465

Seed growers served



766

Foundation trees tagged

2,765

Scion trees tagged

164,421

Seedlings tagged

BPI Plant Quarantine Services



122

Exporters Accredited

(banana, mango, pineapple, okra, papaya, young coconut, asparagus, assorted)



297

Packing Facilities Accredited

(banana, mango, pineapple, okra, shallots, avocado)



500

Farmers/ Growers Accredited

(banana, mango, okra, papaya, avocado)



583

Farmers Registered

(banana, mango, okra, papaya, avocado)

BPI also rendered technical support to various stakeholders in order to open or revive selected market destinations (Table 11).

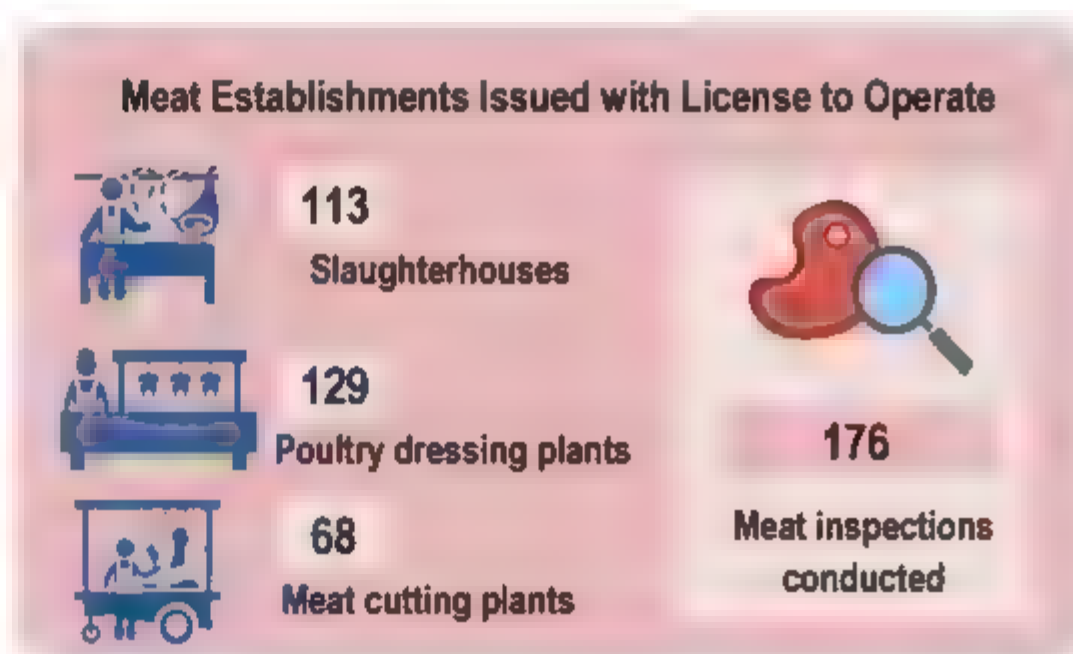
Table 11. Updates on Market Access Requests facilitated by BPI, 2017

| Commodities | Target Destination | Updates on market access requests (MAR) |
|---------------------------------------|--------------------|--|
| Individually Quick-Frozen (IQF) Fruit | China | BPI re-submitted the applications of Profood International Corporation, Linkage Food Ventures Corporation, and Hi-Las Marketing Corporation to China as accredited frozen fruit exporters on February 28, 2017 based on AQSIQ requirements. |
| | | BPI provided SL AgriTech with technical information to complete the requirements of China for the Philippines' MAR. |
| Milled rice | China | In March 14, 2017, BPI submitted to China the Philippines' response to the Questionnaire on Estimation of Security and Management System of Plant-based Food Exportation to China to aid in their risk analysis and to proceed with the export of premium quality rice to China. |
| | | Documents submitted to China are undergoing evaluation. |
| Hass avocado | China | BPI submitted the technical information on Hass avocado for the conduct of Pest Risk Analysis on April 10, 2017. |
| Fresh avocado, calamansi, and okra | Russia | In February 6, 2017, BPI requested market access for fresh avocado, calamansi, and okra export to Russia. |
| | | BPI also provided the list of pests present in the Philippines which are associated with the fruits/ vegetables to be exported. Based on the List of Quarantine Objects (plant pests, anti-plant biological agents-weeds) provided by the Ministry of Agriculture of the Russian Federation, it can be noted that none of the pests listed by BPI were of quarantine concern for Russia. |
| Fresh okra | Korea | In June 16, 2017, BPI submitted the proposed Phytosanitary measures for the export of Philippine fresh okra to Korea. |
| | | Comments and suggestions from Korea's Animal and Plant Quarantine Agency (APQA) on the Philippines' submission of Pest Risk Assessment for Philippine okra and the proposed Phytosanitary measures were responded to by BPI's National Plant Quarantine Services Division. |
| Mango | Korea | In compliance with the protocol on mango export to Korea, BPI assisted the Korean inspector from APQA in conducting an audit/ on-site survey of Philippine mango export in Manila and in Davao from September 18- 26, 2017. Audit and evaluation were conducted on VHT (vapor heat treatment) facilities (5 in Manila, 3 in Davao) as well as mango production areas (2 in Manila, 6 in Davao) |
| | | Following the audit results, the NPQSD strengthened the mango farm registration process, standard operating procedures of each processing facility, and the role of the plant quarantine officers during the treatment and packing of mango fruits for export to Korea. |

| Commodities | Target Destination | Updates on market access requests (MAR) |
|---------------|----------------------------------|--|
| Papaya seeds | Mexico | <p>BPI provided East West Seed Company with technical information related to plant quarantine regulations. This is to complete the additional supplementary technical information required to initiate the Pest Risk Analysis for the export of papaya seeds to Mexico.</p> <p>The additional/ supplementary information was submitted to the National Plant Protection Organization (NPPO) of Mexico on August 9, 2017.</p> |
| Young coconut | Taiwan (re-opening of market) | <p>In preparation for the proposed re-opening of Taiwan market for the export of young coconut, BPI provided the Philippine Coconut Authority (PCA) with information on the establishment of Pest Free Area (PFA) for the Cadang-Cadang disease of coconut. This is one of the requirements of Taiwan for the export of fresh young coconut to their country.</p> <p>BPI is currently preparing the submission to Taiwan of technical information for the conduct of Pest Risk Analysis on fresh young coconut, as well as the proposed survey protocol relative to the Philippines' application for PFA recognition for Cadang-Cadang disease of coconut.</p> |

In support to the livestock, poultry, and meat industry, and to ensure the safety of the meat-consuming public, the NMIS remains steadfast in the conduct of inspection of livestock, meat, and meat products – whether imported or locally-produced. LGUs continue to be essential partners in providing safe meat for Filipinos, especially those produced in local meat establishments. The agency actively carried out information campaigns for meat safety and conducted lectures, seminars, and workshops, as well as regular dialogues with Local Chief Executives, and orientation on Local Meat Inspection System (LMIS).

In 2017, a total of 310 meat establishments (MEs) were issued with License to Operate (LTO). Fifty-eight (58) of these were classified as AAA while the rest were AA. The total number was also 4.38 percent higher than 297 MEs with LTOs recorded in 2016.



The inspection on hygienic and humane slaughter of food animals in accredited meat establishments showed chicken, hogs, and cattle as the most slaughtered animals (Figure 7). A total of 176 surveillance and monitoring operations were carried out by NMIS' Task Force *Bantay-Karne* (TFBK) resulting in 12 strikes and 1,661.68 kilograms of confiscated "hot meat". The Veterinary Inspection Board (VIB) was also involved in these operations. NMIS collected and remitted a total of Php 199,469,803 to the Treasury from inspection fees.

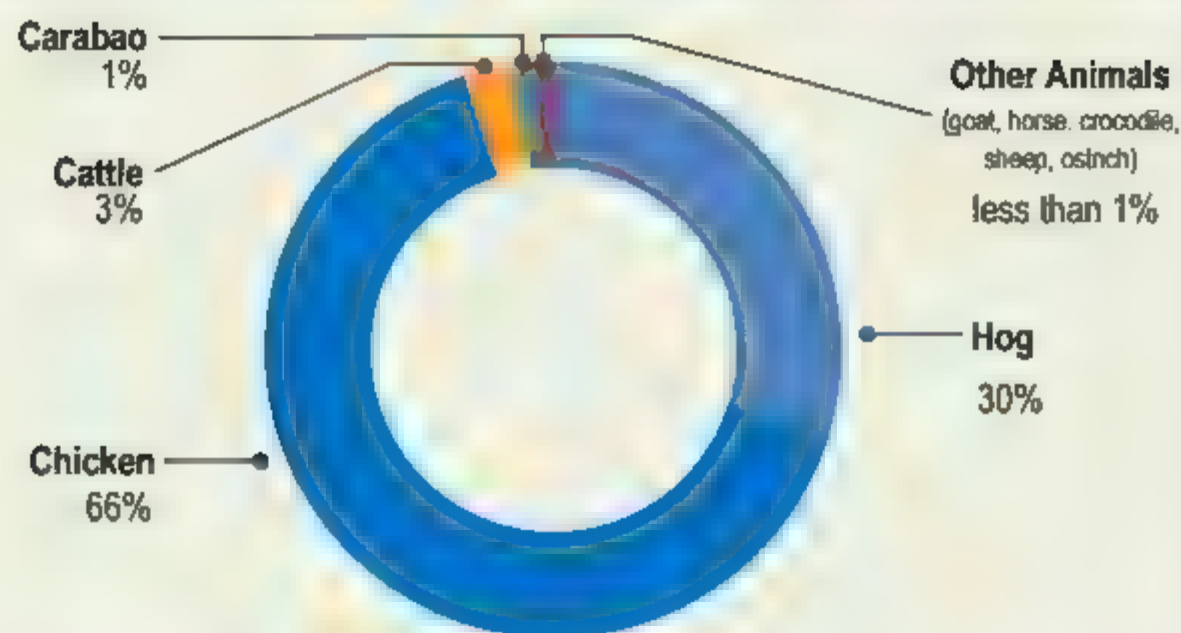


Figure 7. Share in weight of inspected slaughtered meat in accredited establishments (kilograms), 2017 (Source: NMIS)

Meanwhile, in support to the joint surveillance operations of the Animal Kingdom Foundation (AKF), Philippine National Police Crime Investigation and Detection Group (PNP-CIDG), LGUs, and NMIS Regional Technical Operation Centers (RTOCs) to deter illegal trading of dogs for human consumption, four laboratory results were issued in 2017. All results were positive for dog DNA and served as AKF's evidence in filing cases against dog meat traders who violated laws such as RA 9296 or the Animal Welfare Act, RA 9296 10536 or the Meat

Inspection Code of the Philippines, and RA 9482 or the Anti-Rabies Act of the Philippines.

The PhilFIDA also conducted licensing and monitoring/ enforcement services for fiber stakeholders engaged in baling, trading, grading/ classification, and processing of fibers, both for local and foreign consumption. In 2017, total licenses issued reached 1,400 (390 originals/ new applicants and 1,010 renewals). About Php 1.41 million was generated from license fees and surcharge/ penalties.

Fiber Regulation Services



1,400

Licenses issued for fiber baling/ trading/ grading/ processing

1,369

Licensed fiber establishments monitored

6,301

Permits to Transport Fiber issued

3,493

Primary Certificate of Fiber Inspection issued

615,315

Bales inspected

Meanwhile, 1,369 licensed fiber establishments were monitored or re-inspected. Of these, 155 establishments/stakeholders were found to be non-compliant for reasons such as operating with a defective weighing device, without a signboard, and inadequate storage area. Those that had no signboards comprised the largest number of violators with most of them turning out to be new entrants in the industry who were given 60 days to comply; other establishments lost their signboards during strong typhoons that hit their area, while others still were too old or dilapidated to display. Recommendations were generated in Inspection Reports and were duly signed by the stakeholders and the monitoring team.

Meanwhile, two organic certifying bodies (OCBs) continue to operate under the official accreditation issued by BAFS: the Negros Island Certification Services (NICERT) and the Organic Certification Center of the Philippines (OCCP). As of December 2017, these OCBs have certified a total of 78 organic operators in the country. The list can be found in Appendix B.

With the revision of Department Circular No. 6, Series of 2015 (*Revised Guidelines for Official Accreditation of Organic Certifying Bodies*), which eased some of the application requirements/ regulations, more certifying bodies are expected to apply for official accreditation by BAFS in the future.

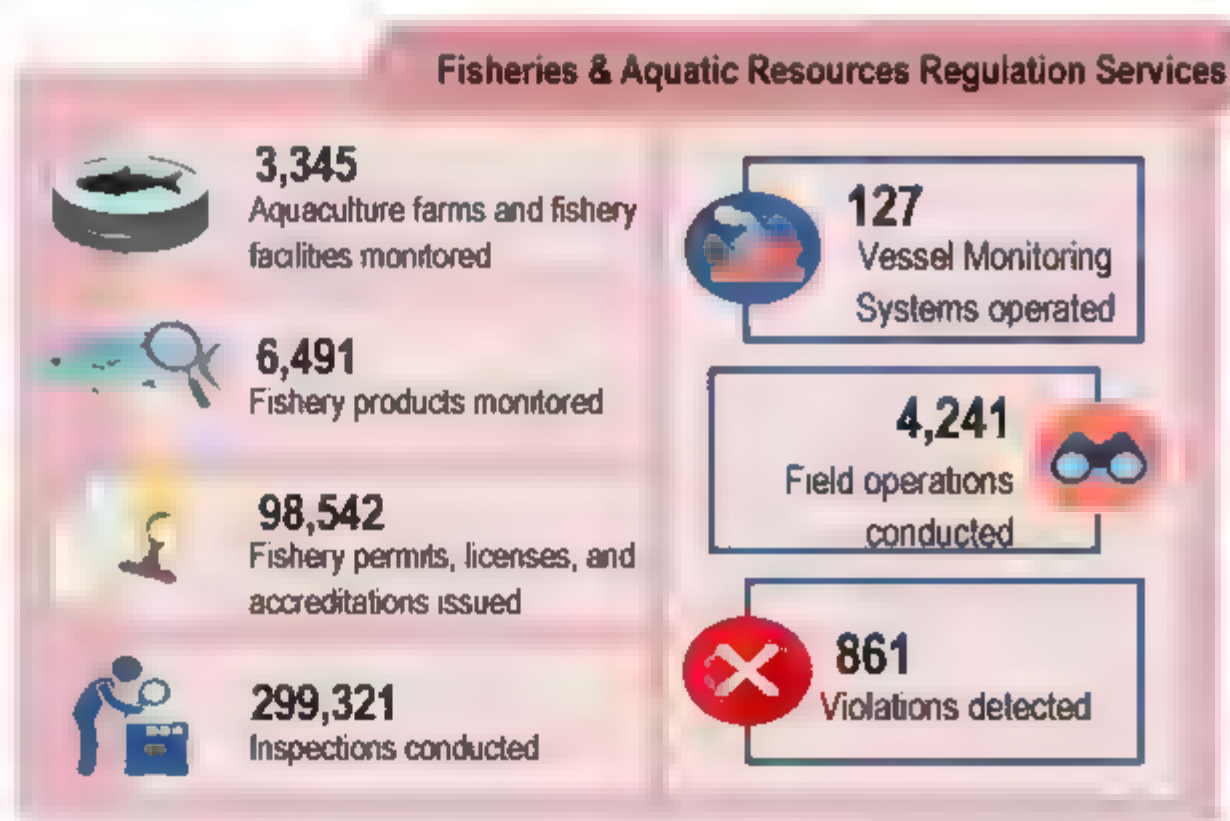
Regulation services for fisheries and aquatic resources include the monitoring of fishery facilities involved in the production chain to ensure consumer welfare, product safety, and public health. BFAR also monitored and inspected aquaculture farms and fishery facilities,



78 Organic operators certified in 2017

fishery products, processing plants and export-accredited processing establishments to ensure compliance to the Hazard Analysis Critical Control Point (HACCP)-based quality assurance, Standard Sanitary Operating Procedures Program (SSOP), and Good Manufacturing Practices (GMP); and issued permits, licenses, and accreditations of fishing vessels, fishpond areas, fish processing plants, and other related establishments.

BFAR's 127 units of MCS vessels and patrol boats were also deployed for 4,241 field operations where a total of 861 violations were detected, such as unauthorized fishing, poaching in Philippine waters, use of fine mesh net, use of active gear in municipal waters, bays, and other fishery management areas, and commercial fishing vessel operators employing unlicensed fisherfolk, fish workers or crew, among others. Some Php 16.6 million were collected from fines and penalties on these violations.



Rabies Eradication Activities. BAI's efforts on the gradual eradication of rabies in the country – in partnership with various stakeholders – have shown great success with the declaration of more municipalities and provinces as rabies-free zones. The municipalities in Masbate (Butuan, Monreal, San Jacinto, and San Fernando), Romblon (Conquera, Concepcion, and Bantuan), and Bohol (Pres. Carlos P. Garcia) were declared as rabies-free zones during the celebration of the World Rabies Day on September 28, 2017.

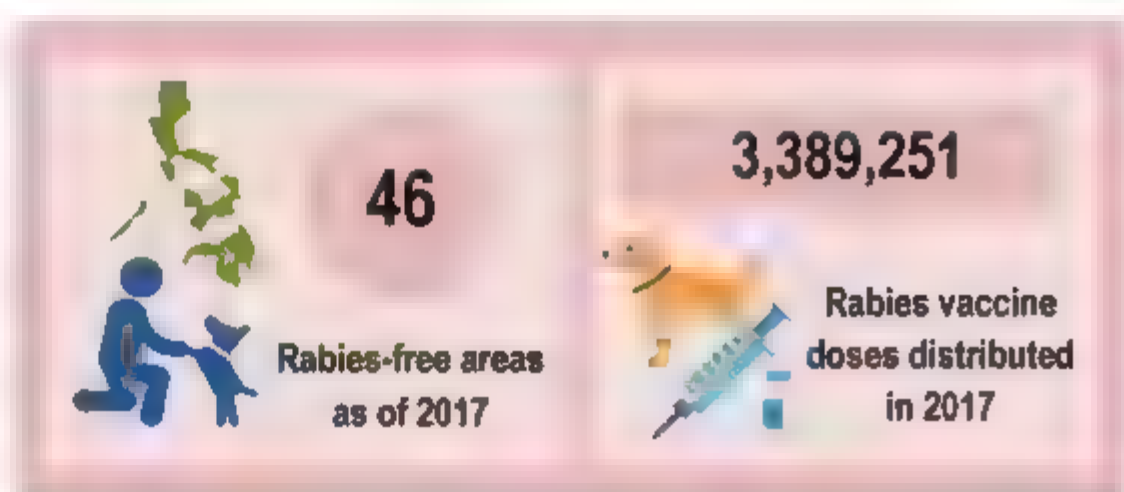
To date, there are 46 areas declared as rabies-free since 2008 with more than three million doses of rabies vaccines distributed nationwide.

Just as pivotal, a Memorandum of Understanding (MOU) was signed between Merial Philippines and BAI in March 2017 on their "Bridge Program". The MOU will aid the BAI in the distribution of anti-rabies vaccines in the LGUs. The Humane Society International (HSI), likewise strengthened their partnership with the Bureau by signing an MOU on their Rabies Eradication Program.

In 2018, BAI will launch the "ONE BAI: 1K Dog Vaccinations Project" that aims to vaccinate at least 1,000 dogs in the Philippines within eight months, particularly in areas with high rabies incidence. All licensed veterinarians of the country will be mobilized in this endeavor to attain the vision of a Rabies-Free Philippines by 2020.

Food safety is considered a global concern and requires a holistic approach from production to consumption. With this, farmers and stakeholders must fully assume their responsibilities at the animal production stage of the food chain to produce safe food. The farming practices in the country are being addressed through the Philippine Good Animal Husbandry Practices (GAHP) Certification Program. Initially implemented by the DA's

BAFS, BAI pursues the Program's goal of ensuring that the farming practices of the applying establishments are in accordance with set standards. In 2017, GAHP was able to train 82 GAHP Inspectors in nine workshops conducted in different regions of Luzon, Visayas, and Mindanao. Meanwhile, five GAHP Certificates have been awarded to farms.



Containment of the Avian Influenza

Outbreak. 2017 was a challenging year for the livestock and poultry sector. In August, there were reports of high poultry mortalities in San Luis, Pampanga, the severity of which eventually resulted in the declaration of Avian Influenza outbreak in San Luis, Pampanga and in San Isidro and Jaen in Nueva Ecija. The BAI worked double time to arrest the spread of the virus.

The Philippines has long made preparations against Avian influenza starting 2004, during the heights of HPAI (Highly Pathogenic Avian Influenza) outbreaks in Asia. The Avian Influenza Prevention Plan (AIPP) has been in place to ensure prevention of this devastating disease with strong public-private partnership.

Following the declaration of Avian Influenza outbreak, samples were collected and tested in BAI laboratories with results showing Bird Flu reactors or AI Type A, subtype H5 reactors. Parallel testing with reliable private laboratories were conducted and revealed similar results. The same samples were sent to the Australian Animal Health Laboratory, an

OIE Reference Laboratory for Avian Influenza, for genetic analysis and confirmation of N6 strain.

In response to these results, the BAI instituted drastic measures which included putting up a 1-kilometer quarantine area where checkpoints were also established. A total ban in the movement of poultry and its products to and from the quarantine area was implemented.

Surveillance that were put up led to the discovery of AI in other areas. Thus, control areas were also established within a 7-kilometer radius to control movement of all poultry, poultry products, and by-products.

To enhance the surveillance, a hotline was provided to encourage farmers to report unusual poultry mortalities and other diseases encountered. All reports were investigated and confirmed through laboratory testing. A total of 4,200 samples (2,350 in San Luis, Pampanga and 1,850 in Nueva Ecija) were collected and tested for laboratory analysis.

While vaccination had been an option, mass culling and disposal were the choices carried out to immediately contain and totally eliminate the AI case in the country. Depopulation and proper disposal of all carcasses, feeds, poultry products and by-products, and other related materials within the quarantine area were done.

A total of 208,471 heads in 21 farms and backyards within the 1-km quarantine area, as well as 52,439 heads in 6 farms within the 7-kilometer control area in San Luis, Pampanga were culled and disposed. In Jaen and San Isidro, Nueva Ecija, a total of 246,792 heads within the 1-km quarantine area and 61,751 heads within 7-kilometer control area were culled and disposed.

Biosecurity was enforced through cleaning, disinfection, and wearing of personal protective equipment (PPEs). During the outbreak, vehicles that entered and exited the 1-km

quarantine zone were sprayed with disinfectant. Further, cleaning and thorough disinfection of all farm equipment, vehicles, and facilities were carried out. A total of 39,400 PPEs (safety goggles, head cover, gloves, masks, disposable gowns, and rubber boots) and 116 bottles of disinfectants were disseminated.

In less than a month after the declaration of confirmed AI cases in the country, it was announced that the AI outbreak has been contained.

Credit, Insurance, and Guarantee

Credit

Availability, accessibility, and affordability of credit for marginal farmers and fisherfolk are the end-results of the Agricultural Credit Policy Council's (ACPC) services. Thus, in fulfilling these commitments, the ACPC continued to implement its credit programs while also designing two new ones, namely, the Production Loan Easy Access (PLEA) and the Survival and Recovery Assistance (SURE).

PLEA is an easy access credit program focused towards providing fast, convenient, and affordable credit to marginal farmers and fisherfolk in the poorest provinces and indigenous areas unserved by lending institutions and do not have any access to formal credit services. The program provides non-collateral loans for agri-fishery production at 6 percent annual interest rate payable in 2-10 years, depending on the project.

In order to reach more small farmers and fisherfolk, the Program taps grassroots and resident financial and non-financial organizations such as cooperatives, cooperative banks, farmer/ fisher associations, and NGOs as lending conduits. As of the end of 2017, PLEA has 84 lending conduits and counting. Within the year, a total of Php768.70 million in loans was released to 28,708 farmers and fisher-borrowers.

On the other hand, **SURE** was designed to be a quick-response, post-disaster survival and recovery loan assistance aimed at supporting the immediate rehabilitation of agricultural and livelihood activities of small farmers and fisherfolk affected by natural calamities and adversities. The Recovery Loan Assistance component is payable in three years at zero interest rate to allow the farmer/ fisher to recover losses. It was allocated an initial program fund of Php 100 million from the Agro-Industry Modernization Credit and Financing Program (AMCFP).

Current financial institution (FI) partners/ lending conduits under various programs of DA, the ACPC, Land Bank, and other government agencies were tapped to hasten the release of the financial assistance under SURE. For the year, a total of Php 66.96 million in financial assistance was granted to 4,129 farmers in

eight provinces who were affected by Typhoons Nina (Camarines Sur and Catanduanes), Auring (Agusan del Norte and Agusan del Sur), and Crising (Cebu), the Avian Influenza outbreak (Pampanga and Nueva Ecija), and the conflict in Marawi.

For the year, six credit programs released a total of Php 3,558.68 million in loans to 69,253 farmer and fisher-borrowers: PLEA, SURE, Agriculture and Fishery Financing Program (AFFP), *Sikat Saka* Program (SSP), Agrarian Production Credit Program (APCP), and the Cooperative Bank Agri-Lending Program (CBAP). AFFP, SSP, and APCP were implemented through the Land Bank of the Philippines, while CBAP was implemented through cooperative banks. Table 12 summarizes the accomplishments of these programs in 2017 by Island group and region.

Table 12. Amount of Loans Granted and Number of Small Farmers and Fisher-Borrowers under the ACPC Credit Programs as of December 31, 2017

| Island Group/ Region | Loans Granted | | Borrowers | |
|----------------------|-----------------|---------------|---------------|---------------|
| | Amount | Share in % | Number | Share in % |
| Luzon | 1,978.38 | 55.59 | 30,329 | 43.79 |
| CAR | 115.94 | 3.26 | 2,990 | 4.32 |
| Ilocos Region | 64.83 | 1.82 | 2,159 | 3.12 |
| Cagayan Valley | 662.66 | 18.62 | 7,222 | 10.43 |
| Central Luzon | 707.70 | 19.89 | 9,978 | 14.41 |
| CALABARZON | 29.40 | 0.83 | 1,287 | 1.86 |
| MIMAROPA | 342.07 | 9.61 | 4,238 | 6.12 |
| Bicol Region | 55.77 | 1.57 | 2,455 | 3.54 |
| Visayas | 942.19 | 26.48 | 23,448 | 33.86 |
| Western Visayas | 406.01 | 11.41 | 6,098 | 8.81 |
| Central Visayas | 258.95 | 7.28 | 5,620 | 8.11 |
| Eastern Visayas | 194.09 | 5.45 | 9,494 | 13.71 |
| Zamboanga Peninsula | 83.14 | 2.34 | 2,236 | 3.23 |
| Mindanao | 638.11 | 17.93 | 15,477 | 22.35 |
| Northern Mindanao | 110.35 | 3.10 | 2,311 | 3.34 |
| Davao Region | 33.92 | 0.95 | 789 | 1.14 |
| SOCCSKSARGEN | 336.56 | 9.46 | 7,927 | 11.45 |
| Caraga Region | 151.36 | 4.25 | 3,168 | 4.57 |
| ARMM | 5.91 | 0.17 | 1,282 | 1.85 |
| Total | 3,558.68 | 100.00 | 69,253 | 100.00 |

ACPC also regularly monitors the lending facilities of the AMCFP and its ICB programs to determine program effectiveness and attainment of expected outcomes. In addition, ACPC also regularly collects and analyzes data on the following: (1) the banking system's loans to agriculture and fisheries; and (2) status of other government-supported credit, guarantee, and insurance programs.

Fifty-five (55) field validations involving SFF borrowers were conducted to verify the veracity of program performance reports submitted by partner FIs and compliance with program terms and conditions (such as the eligibility of borrowers, loan utilization, and interest rate charged at the end-borrower level), as well as the contribution of the program to the improvement of the access to financing for targeted SFF-borrowers.

For PLEA alone, field validations were completed in 12 provinces. A total of 742 randomly-selected PLEA borrowers under 24 lending conduits were interviewed. Findings show that SFF borrowers were generally satisfied with the program. More specifically:

- There is an improvement in the access of SFF borrowers to formal credit sources. While it is the first time for 83 percent of the respondents to borrow from the conduits, 56 percent of the respondents revealed that it is the first time for them to borrow from sources.

- *Loan adequacy.* Around 65 percent of the respondents indicated that the loans availed were adequate. Loans availed ranged from Php5,000 to Php150,000 per borrower.
- *Interest rate.* All of the lending conduits complied with the interest rate provision of the program, which is 6 percent per annum. 100 percent of the respondents also considered the interest rate affordable.
- *Ease of credit access.* SFF borrowers appreciated the ease in accessing credit through PLEA as documentary requirements were easy to provide, allowing more unbanked SFF to avail of credit.

Insurance

The vulnerability of the country to natural disasters continues to pose great risks to agricultural producers. Thus, the government upholds the provision of insurance to farmers and fisherfolk as a priority intervention. This unwavering support, as well as increasing public appreciation for insurance, has enabled the Philippine Crop Insurance Corporation (PCIC) to sustain its tremendous growth in carrying out its functions, as shown by the improvements in the agency's accomplishments from 2016 in Table 13:

Table 13. PCIC Insurance Coverage, 2016-2017

| Particulars | 2016 | 2017 |
|--|------------|--------------|
| Number of farmers/ fishers | 1,095,024 | 1,669,871 |
| Areas in hectares (rice, corn, high-value crops) | 901,493.16 | 1,328,685.84 |
| Amount of cover in Php million | 39,087,814 | 58,512,24 |
| Number of claimants | 171,700 | 278,157 |
| Indemnity paid in Php million | 1,510,278 | 1,925,520 |

On the social protection aspect, the PCIC provided insurance protection to almost 1.7 million farmers and fisherfolk in 2017, 52 percent more than the 1.095 million covered in 2016. Among those individuals covered, about 53 percent were granted with full free insurance coverage under the following programs:

- a. Insurance protection for the subsistence farmers and fisherfolk listed in the Registry System for Basic Sectors in Agriculture (RSBSA) provided by DBM;
- b. Free Agricultural Insurance for Typhoon Yolanda-affected areas;
- c. Free Agricultural Insurance for Agrarian Reform Beneficiaries (ARBs) availing of the Agrarian Production Credit Program (APCP) and Credit Assistance Program for Program Beneficiaries Development (CAP-PBD) of Department of Agrarian Reform (DAR) and Land Bank of the Philippines (LBP); and
- d. DA Programs: LBP Sikat Saka, Weather Adverse Rice Areas (WARA), High Yielding Technology Adoption (HYTA), Program for Unified Lending to Agriculture (PUNLA)-Production Loan Easy Access (PLEA), Survival Recovery (SURE) Program, and Planters Product, Inc. – DA Masaganang Ani 2000.

Insured rice, corn, and high-value crop farms likewise expanded in coverage by 47 percent from 901,493 hectares to 1.3 million hectares.

On the financial side, the PCIC provided Php58 billion in insurance cover to participating farmers and fisherfolk, 50 percent more than the Php39 billion amount of cover in 2016. The government premium provided to subsidize the premium payments of subsistence farmers and fisherfolk amounted to Php3.031 billion, 26 percent higher compared to the Php2.41 billion given in 2016.

The amount of premium generated reached Php3.370 billion, 25 percent higher than the Php2.688 billion collected in 2016. Finally, a total of Php1.9 billion in insurance claims was paid out to 278,157 farmers and fisherfolk, 27 percent more than the Php1.510 billion indemnity paid out in 2016.

The big strides that PCIC continues to make earned them the 3rd spot in the Top 8 Government-Owned and Controlled Corporations (GOCCs) for the Award on Excellence in Corporate Governance in 2017, taken from a selection of 85 GOCCs in the country. The PCIC already received the Excellence Award for two consecutive years ever since it was started in 2016 by the Governance Commission for GOCCs (GCG) and the Institute of Corporate Directors.

The award was made based on the Corporate Governance Scorecard, which assesses the GOCCs on their adherence to best practices and in compliance with international standards on corporate governance, making them at par with those of more advanced state-owned enterprises in other member countries of the ASEAN. Among the criteria considered in evaluating these best practices and high international standards were policies on handling stakeholder relationships, public disclosures and transparency, and responsibilities of their corporate Boards. This recognition is further impetus for the PCIC to continue improving its operations.

Guarantee

Access to credit from formal lenders has been a long time concern for small-scale farmers and fisherfolk. Most of the farmers do not own the land that they till while most lending institutions require collateral prior to granting of the loan.

One of the government programs that can help farmers and fisherfolk access credit from

formal lenders is the Agricultural Guarantee Fund Pool (AGFP), a DA-led program with the Land Bank of the Philippines as the Program Institutional Manager. AGFP encourages lending institutions to extend unsecured agricultural food production loans to small farmers and fisherfolk by mitigating the risks in agri-lending through the provision of the guarantee. This will help flow the credit to the agriculture and fishery sector. AGFP covers production loans extended for short-gestating crops/ commodities such as palay, corn, livestock, and fishery.

AGFP has been in partnership with various lending institutions throughout the country. For 2017, AGFP was able to guarantee Php6.7 billion loans (Table 14), with paid guarantee claims amounting to Php312 million. The greatest beneficiaries of the AGFP are the small farmers and fisherfolk who would have not been able to borrow without the guarantee. This year, 76,031 small farmers and fisherfolk were covered by the guarantee.

To encourage more lending institutions to extend unsecured agricultural food commodity production loans to small farmers and fisherfolk, AGFP conducted marketing activities such as training/ workshop for partner lending institutions (PLIs), sponsorship, one-on-one briefings/ re-orientation with various PLIs. These activities resulted in the establishment of a guarantee line of 13 new partners, re-establishment of lines of two (2) PLIs, and reduced invalid guarantee claims.

The average processing of guarantee claims is 44 days from receipt of complete documents. The overall Recovery Efficiency is 41 percent. The AGFP also implemented the Scaling-up Initiative to Promote Agricultural Guarantee (SIPAG) Facility to hasten the evaluation and guarantee line approval process, increase the number of PLIs, and expand guarantee coverage.

Table 14. AGFP Accomplishments

| Particulars | Accomplishment in 2017 | Cumulative |
|---|------------------------|------------|
| Number of Partner Lending Institutions | 83 | - |
| Guaranteed Loans in Php million | 6,773.46 | 43,778.22 |
| Total Number of Accounts Enrolled for Guarantee | 114,164.00 | 967,556.00 |
| Total Guarantee Claims Paid in Php million | 312.11 | 1,574.63 |
| Recoveries/ Collections in Php million | 194.78 | 649.49 |
| Guarantee Fees Collected in Php million | 61.19 | 382.40 |

Source: DA Office of the Undersecretary for Rural Credit

Agriculture and Fishery Policy Services

Building a competitive agriculture and fishery sector also necessitates having a sound policy environment that will contribute to raising the quality of life and promoting food security. The DA's Policy Research Service (PRS) leads the analysis and review of options for the resolution of policy issues, as well as provision of technical assistance in various priority

legislative agenda of the DA for the benefit of the sector. Meanwhile, the Philippine Council for Agriculture and Fisheries (PCAF) assists in the preparation of policy recommendations and resolutions adopted by various National Sectoral and Strategic Concerns Committees (NSSCCs) on commercial crops, poultry and livestock, and agricultural and fishery machineries and equipment.

Some of the accomplishments related to these are as follows:

- Provided technical support in the crafting of the draft bill amending RA 8178 or the Agricultural Tariffication Act in order to tariffy imported rice at rates and terms that will benefit rice farmers. This is in response to the expiration on June 30, 2017 of the waiver granting the Philippines special treatment on rice by the World Trade Organization (WTO), and the corresponding need to amend RA 8178 to remove the quantitative restriction on rice.

The tariffication bill also provides for the creation of the Rice Competitive Enhancement Fund which shall consist of duties collected from the importation of rice under this Act to be used solely for the improvement of the rice industry and to cushion the impact of rice trade liberalization.

- Assisted the Committee on Commercial Crops in the adoption of Resolution No. 15 Series of 2017 Recommending to the Senate Committee on Ways and Means the exclusion of locally-manufactured coffee with sugar in the imposition of excise tax on Sugar-Sweetened Beverages (SSB) Bill.

The Senate Committee cancelled the inclusion of locally-produced coffee in the imposition of excise tax as low income earners, particularly workers, are major consumers of SSBs like coffee mixes. Sparing the 3-in-1 from the Train Bill has a great impact on coffee farmer-producers and consumers, as well.

- Assisted the Committee on Poultry, Livestock and Feed Crops in the adoption of Resolution No. 1 Series of 2017 Recommending to the DA Secretary that the validation of Sanitary and Phytosanitary (SPS) Permits in the poultry, livestock and feed crops products be limited to meat and meat products which are prone to smuggling.

With this recommendation, the DA Secretary issued a Memorandum restoring the conduct of validation of SPS back to its normal procedure. The revalidation of all import permits will guarantee food safety and prevent the entry, establishment or spread of pests, diseases, or disease-carrying/-causing organisms, and rampant cases of recycling of old permits, as well as to prevent smuggling.

- Provided comments during the deliberations of the Coco Levy Bill, such as: removing the cap of five hectares of coconut farm in the definition of a coconut farmer to make it more inclusive; providing more seats for farmers in the Trust Fund Committee; concurrence with the House version of the bill to use Php 10 billion of the initial trust principal within two years to jumpstart the development of the industry, and that the remainder of the trust principal be preserved and maintained for the benefit of the future generation of coconut farmers in the industry; and to revisit the draft Coconut Industry Roadmap and to also include the comments and suggestion of coconut farmers in the finalization of the document.
- Crafted the Implementing Rules and Regulations for the Customs Modernization and Tariff Act (CMTA) to monitor the regulatory functions of the DA ensuring food safety, such as the issuance of Sanitary and Phytosanitary Clearance for agriculture and fisheries products that enter the country, and the modernization of facilities conducting these tests.
- Concurrence with the Agriculture and Fisheries Enhancement Fund (ACEF) Extension Law to cover more stakeholders in the granting of loans and scholarships.
- Successfully negotiated at the Senior Officials Meeting of the ASEAN Ministers on

Agriculture and Forestry (SOM-AMAF) consensus for support for the signing of an ASEAN letter to the US Secretary of Agriculture requesting for the non-delisting of carrageenan as ingredient in organic foods.

This is in response to the recommendation of the National Organic Standards Board (NOSB) of the USDA to remove carrageenan from the National List of Allowed and Prohibited Substances in Organic Food, based on the criteria in the Organic Food Production Act (i.e., availability of alternatives, also known as essentiality).

Seaweed farming is beneficial to the marine ecosystems, as seaweed farms serve as habitat and nursery to many marine animals. Carrageenan farming, which requires minimal capital and material inputs, could offer higher returns than other economic activities. The industry has also created supportive and administrative jobs in laboratories and government offices.

If the USDA adopts the NOSB recommendation, it will significantly damage the market for carrageenan and, consequently, cause economic displacement of some 3 million individuals engaged in

seaweeds growing and processing in the ASEAN region. Forty-eight percent (USD36.8 million) of carrageenan imported by the US in 2016 was primarily sourced from the Philippines, Indonesia, and Malaysia.

- Strongly lobbied with coconut producers/exported among ASEAN and APEC members, particularly Brazil, to counter the unhealthy claims of the American Health Association (AHA) on coconut oil and its by-products – the Philippines being the biggest producer and exporter of coconut oil in the world.

The Asia and Pacific Coconut Community has sent communication to the AHA lobbying against the advisory, to which the AHA responded that they will take into consideration all presented evidence in the future development of guidelines. Further work is necessary in 2018 to fight off the negative media attention on this topic, which will be jointly undertaken by the DA, Philippine Coconut Authority (PCA), and the Department of Trade and Industry (DTI).

Focused Interventions to Effect Positive Changes

The Department's Service Units (Bureaus, Attached Agencies, and Attached Corporations) perform critical functions in support to the interventions being provided by the Regional Field Offices, as well as specific services not covered by the mandates of the RFOs.

| Operating Unit | Highlights |
|--|---|
| BUREAUS | |
| Agricultural Training Institute (ATI) | Led the coordination of various proactive and responsive extension delivery services (see section on <i>Technical and Support Services – Extension, Education, and Training Support Services</i>). |
| Bureau of Agricultural and Fisheries Standards (BAFS) | <ul style="list-style-type: none"> • Formulated, enforced, and harmonized internationally-accepted standards and practices for fresh, primary, and postharvest agricultural and fisheries commodities, as well as agri-fishery machinery, tools, and equipment (see section on <i>Agricultural and Fishery Regulation Services</i>). • Maintained the accreditation of two (2) organic certifying bodies who certified 78 organic operators in 2017 (see Appendix B). |
| Bureau of Animal Industry (BAI) | <ul style="list-style-type: none"> • Supported the implementation of the Animal Health Program and the Rabies Eradication Program (see section on <i>Agricultural and Fishery Regulation Services</i>) <ul style="list-style-type: none"> ◦ Led the efficient disease containment and eradication of the Avian Influenza Outbreak in San Luis, Pampanga and in San Isidro and Jaen in Nueva Ecija. • Continued the implementation of the Philippine Native Animal Development (PNAD) Program with the development of training modules on native pig, native chicken, and native duck. • Conducted evaluation of prospective recipients of small ruminants under the Animal Genetic Infusion Project (AGIP); to date, more than 2,000 head of goat have been distributed to government and private farms. • Installed 5 biogas digesters in Zamboanga Peninsula under the National Animal Waste Resource Management Program (NAWRMP) to convert animal waste into energy |
| Bureau of Agricultural Research (BAR) | <ul style="list-style-type: none"> • Undertook the coordination of various agricultural research activities (see section on <i>Technical and Support Services – Research and Development</i>). |
| Bureau of Plant Industry (BPI) | <ul style="list-style-type: none"> • Enforced plant quarantine laws, rules, and regulations, provided services on seed testing and certification, as well as technical assistance in the export of crops that are compliant with global standards (see section on <i>Agricultural and Fishery Regulation Services</i>). • Approved 30 crop varieties (see Appendix C). |
| Bureau of Soils and Water Management (BSWM) | <ul style="list-style-type: none"> • Undertook programs and initiatives that promote judicious soil and water management for sustainable agriculture. • Launched the National Soil Sampling and Testing (NSST) for Fertility and Crop Suitability Assessment that will help farmers and other stakeholders stay updated with latest soil management techniques. |

| Operating Unit | Highlights |
|----------------|--|
| | <ul style="list-style-type: none"> ○ Generated and turned-over 31 maps to LGUs with information on soil fertility, nitrogen, phosphorus, potassium, pH, fertilizer-guide, and suitability (particularly for rice production). • Launched a Land Suitability Evaluation for garlic and onion production that will also generate color-coded maps. • Continued the promotion of organic fertilizers through the establishment of Composting Facilities for Biodegradable Wastes (CFBW) and Small-Scale Composting Facilities (SSCF). • Supported efforts to reduce pollution in the Manila Bay by undertaking studies on its watershed quality to identify impacts of water quality to agricultural productivity <ul style="list-style-type: none"> ○ Areas in Nueva Ecija within the Bay's watershed have been identified as potential sites for the establishment of Integrated Upland Conservation-Guided Farms (IUCGFs). |

ATTACHED AGENCIES

| | |
|--|--|
| Agricultural Credit Policy Council (ACPC) | <ul style="list-style-type: none"> • Provided marginal farmers and fisherfolk with accessible and affordable credit; designed two (2) new credit programs. PLEA and SURE (see section on <i>Credit, Insurance, and Guarantee – Credit</i>). • Currently conducting the Small Farmers and Fisherfolk Indebtedness Survey that will provide information on borrowing incidence, nature, extent, and terms of borrowing, as well as constraints to loan access and repayment among small farmers and fisherfolk. |
| Bureau of Fisheries and Aquatic Resources (BFAR) | <ul style="list-style-type: none"> • Supported the development of the fisheries sector through the National Fisheries Program (see sections on <i>Technical and Support Services – Fishery Sector</i> and <i>Agricultural Equipment and Facilities Support Services</i>). <ul style="list-style-type: none"> ○ Continued the conduct of the search for the <i>Malinis at Masaganang Karagatan</i> (MMK) to motivate and empower fisherfolk to take active involvement in conserving and rehabilitating their coastal communities. ○ Implemented <i>Balik Sigla sa Ilog at Lawa</i> (BASIL) to rejuvenate the country's major inland bodies of water. • Monitored and inspected aquaculture farms and fishery facilities and products, conducted field operations in the enforcement of fishery laws on illegal, unreported, and unregulated fishing (see section on <i>Agricultural and Fishery Regulation Services</i>). |
| National Meat Inspection Service (NMIS) | <ul style="list-style-type: none"> • Implemented various activities to ensure meat safety (see section on <i>Agricultural and Fishery Regulation Services</i>). • Managed infrastructure projects such as the Meat Establishment Improvement Program (MEIP) and the Small-scale Meat Establishment Program (SSMEP) to support LGUs in the rehabilitation or establishment of slaughterhouses or poultry dressing plants (see section on <i>Agricultural Equipment and Facilities Support Services</i>). |

| Operating Unit | Highlights |
|--|---|
| Philippine Council for Agriculture and Fisheries (PCAF) | <ul style="list-style-type: none"> Assisted the preparation of policy recommendations and resolutions adopted by various National Sectoral and Strategic Concerns Committees (NSSCCs) on commercial crops (abaca, sugar, coffee, and cacao), poultry and livestock, and agricultural and fishery machineries and equipment. Launched the Farmer-Director Program installing Regional Agricultural and Fishery Council (RAFC) Chairpersons as Farmer Regional Executive Directors (FRED) during the whole month of May as part of the celebrations of the Farmers' and Fisherfolks' Month <ul style="list-style-type: none"> The Program aims to deepen the involvement of AFCs in the planning and problem-solving processes of the DA. For the whole month of May, FREDs assumed the administrative and technical roles of the DA Regional Executive Directors and provided inputs on policy-related issues. |
| Philippine Carabao Center (PCC) | <ul style="list-style-type: none"> Implemented the Carabao Development Program (CDP) through: <ul style="list-style-type: none"> Active pursuit of the R4D (Research for Development) initiative where 26 researches have been completed for the year, 70 studies are currently ongoing (20 of which were externally-funded); Genetic Improvement Program where two (2) bull farms are being maintained, more than 200,000 doses of frozen semen were distributed, 47,000 animal head were artificially inseminated, and 153 bulls were loaned for the natural servicing of female carabaos in lieu of artificial insemination; Carabao-based Enterprise Development (CBED) where five (5) cooperatives/ associations were assisted to be organized in 2017 to have better opportunities for more income; these groups are in addition to the existing: <ul style="list-style-type: none"> 207 cooperatives/ associations comprising of 6,579 carabao owners in the Visayas and Luzon Regional Impact Zones (the most notable dairy cooperatives, particularly those based in Pampanga, Cavite, Batangas, Bulacan, Laguna, Leyte, Isabela, and Quirino contributed 563,315 75 kilograms of milk to the dairy industry); 58 dairy cooperatives consisting of 865 smallhold farmers handling 3,293 head of dairy buffaloes in the National Impact Zone, which posted more than 1 million kilograms of raw milk (a portion of this was sold to local processors while the rest was sold as processed milk products such as <i>pastillas</i>, <i>kesong puti</i>, and flavored milk). A total 9 dairy buffalo farms continued to be assisted under the Dairy Buffalo Multiplier Farm (DBMF) to improve efficiency in the multiplication of good quality genetics and to establish a viable commercial buffalo-based dairy farm |
| Philippine Center for Postharvest Development and Mechanization (PHilMech) | <ul style="list-style-type: none"> Coordinated research, extension, and development activities to address mechanization concerns from production to post-production of agricultural crops (see section on <i>Agricultural Equipment and Facilities Support Services</i>). Completed 20 R&D studies, conducted 19 new studies, and assisted the ongoing pursuit of 16 projects. Provided training to 2,128 individuals such as capability-building for drying and milling plant servicing for NC III, specialized training course on the mechanization of the rice crop establishment, and training course on mechanization and postharvest technologies for cacao. |

| Operating Unit | Highlights |
|--|---|
| Philippine Fiber Industry Development Authority (PhilFIDA) | <ul style="list-style-type: none"> • Spearheaded R&D activities on fibercrops and fiber utilization and technology in which 39 researches are now in various stages of implementation. • Provided production support for various fibercrops and implemented the Abaca Disease Management Project (see section on <i>Technical and Support Services – Crops Sector</i>). • Provided assistance in the maintenance of nurseries that produced planting materials for use of abaca farmers. In 2017, 81.5 hectares were maintained while 23.5 hectares of new nurseries were established in the Bicol Region, Western Visayas, Zamboanga Peninsula, and Caraga. • Assisted a total of 2,109 farmers in the establishment of 1,606 hectares of abaca farms, while 881.40 hectares were rehabilitated for the benefit of 986 farmers. In addition, 5.7 hectares of sisal and 12 hectares of salago were established in Central Visayas • Provided trainings to fibercrop-growing families on basic handloom-weaving as well as other fibercraft livelihood trainings. • Conducted monitoring activities on fiber traders and establishments to maintain quality of fibers (see section on <i>Agricultural and Fishery Regulation Services</i>) |

ATTACHED CORPORATIONS

| | |
|--------------------------------|--|
| National Dairy Authority (NDA) | <ul style="list-style-type: none"> • Successfully lobbied for the inclusion of the Herd Build-up and Milk Feeding Programs in the government's 2017 National Priority Plan (NPP). In 2017, these major programs achieved the following in support to the country's dairy sector: <ul style="list-style-type: none"> ○ Dairy Herd Build-Up Program - some 360 dairy animals produced locally were collected as payment under the Program's <i>Palit-Baka</i> Scheme, which, in turn, were distributed to new and existing dairy farms, enabling NDA to also save the government around USD 0.726 million worth of importation cost of dairy animals; ○ Milk-Feeding Program (MFP) - benefitted 1,198 community-based children in the fight against malnutrition; some 1,000 dairy farms were also supported by the program as 17,586 liters of their milk produce were bought by the government to fill the milk requirements of these children. The MFP was carried out through NDA's partnerships with the concerned LGUs, the Philippine Charity Sweepstakes Office (PCSO), and the Departments of Science and Technology (DOST) and Education (DepEd). • NDA-assisted dairy farms recorded total milk production of 16,123,000 liters (3 percent higher than the 2016 production) for use of milk processing plants in the manufacture of pasteurized milk, flavored milk cheese, and yoghurt, among others. Said volume also contributed 71 percent to the national local milk production. Small hold farmers, who comprised the majority of dairy industry players, posted total gross revenue of Php 115.7 million (annual average of Php0.302 million per farmer from the 2016's Php 0.203 million). This can be translated to a 49.9 percent increment in milk revenue. • Currently crafting the Dairy Safety Regulations (DSR) in consonance with the Food Safety Act of 2013 to ensure safe food by regulating milk production and postharvest handling. Once finalized, profiling of dairy farmers will be conducted who, in turn, will be required to design their respective Risk Management Plans. Dairy Safety Compliance Officers will be trained to carry out dairy farm audit. |
|--------------------------------|--|

| Operating Unit | Highlights |
|---|--|
| National Tobacco Administration (NTA) | <ul style="list-style-type: none"> Implemented the Tobacco Contract Growing System (TCGS) where 4,617 tobacco farmers with an area of 2,841 hectares were provided with production assistance amounting to Php 115 million. Supported some 3,000 farmers in the construction or repair of their curing barns or air-curing sheds through the Curing Barn Assistance Program (CBAP). Actively engaged in the preservation or restoration of forest areas that are sources of curing fuelwood through the <i>Kahuyang Pangkabuhayan at Pangkalikasan</i> (KPP) component of the Renewable Fuelwood Energy Development Program where some 2.8 million seedlings of ipil-ipil, gemelina, and mahogany were planted to 1,130 hectares, and 46,685 bamboo seedlings were planted to 228 hectares, all for the benefit of 1,177 farmers |
| Philippine Crop Insurance Corporation (PCIC) | <ul style="list-style-type: none"> Provided insurance protection to 1.70 million agri-fishery stakeholders in 2017 (see section on <i>Credit, Insurance, and Guarantee – Insurance</i>). |
| Philippine Fisheries Development Authority (PFDA) | <ul style="list-style-type: none"> Supported the development of the fisheries sector by providing postharvest facilities and services (see section on <i>Agricultural Equipment and Facilities Support Services</i>). |
| Philippine Rice Research Institute (PhilRice) | <ul style="list-style-type: none"> Actively pursued the Research for Development (R4D) initiative to develop rice science and technology, and to generate information and other products through various programs (see section on <i>Technical and Support Services – Research and Development</i>). |
| Sugar Regulatory Administration (SRA) | <ul style="list-style-type: none"> Supported the growth and development of the sugar industry through Block Farming. In 2017, 45 block farms were accredited in Visayas with a total area of 1,607.69 hectares and 1,382 enrollees. For Luzon and Mindanao, there were 21 block farms accredited with a total area of 944.61 hectares and 50 enrollees. For crop year 2016-2017 (covering the period September 1, 2016 to August 31, 2017), raw sugar production increased by 11.69 percent to 2.5 million MT from the 2.2 million MT recorded in crop year 2015-2016. The increase was attributed to proper farming practices as well as onset of favorable weather conditions which resulted in a 20 percent increase in tons cane milled (from 23.25 million MT in CY 2015-2016 to 28.01 million MT in CY 2016-2017). Total sugarcane plantation area for CY 2016-2017 was 421,358 hectares, the first time a positive change was noted after two (2) consecutive years of decreasing plantation area, which was attributed to conversion of plantations from sugarcane to other crops. In CY 2016-2017, there were 27 operational mills and eight (8) sugar refineries. Provided scholarship to underprivileged but deserving college and post-graduate students taking up courses in relevant fields of discipline in State Universities, as well as scholarships for vocational courses and skills development for farmers, farm technicians, and skilled workers in sugar refineries and biomass power plants. <ul style="list-style-type: none"> Beneficiaries from SIDA Scholarship from January 2017 to date are 496 CHED-approved scholars, 336 TESDA scholars, and 48 SRA scholars. For SY 2017-2018, SRA is sponsoring seven (7) scholars, two (2) from the UPLB and five (5) from the Central Philippines State University in Negros Occidental. |

Development Programs and Projects

Philippine Rural Development Project (PRDP)

On its third year of implementation, the DA's Philippine Rural Development Project (DA-PRDP) continues to serve as an effective platform of the national government to sustainably spur modern, inclusive, value chain-oriented, and climate-smart agriculture for LGUs nationwide.

A World Bank-assisted project designed to establish significant institutional and governance reforms, the PRDP remains committed to pave the way for the DA to provide more efficient and effective services to stimulate growth in the country's agriculture and fishery sector.

This six-year project is anchored on the development objective of dispersing economic activities to the countryside and improving access of farmers and fisherfolk to DA services and, consequently, increase rural incomes and enhance farm and fishery productivity in targeted areas.

The Project is comprised of four major components (Figure 8) and has a total cost of about Php 27.5 billion. Of this, Php20.6 billion (75 percent) comes from Loan Proceeds, Php287 million (1 percent) from the Global Environment Facility (GEF) fund, and Php6.7 billion (24 percent) as counterpart from the National and Local Governments.

Table 15. PRDP Component Cost by Financier²

| Components | Loan Proceeds | | GEF Grant | | GOP Counterpart- DA (Million) | | GOP Counterpart- LGU (Million) | | TOTAL | |
|----------------|---------------|------------------|-----------|------------|----------------------------------|-----------------|-----------------------------------|-----------------|---------------|------------------|
| | USD | Php | USD | Php | USD | Php | USD | Php | USD | Php |
| I-PLAN | 14.29 | 585.89 | 1.4 | 57.4 | 3.57 | 146.37 | - | - | 19.26 | 789.66 |
| I-BUILD | 361.71 | 14,830.11 | - | - | 45.21 | 1,853.61 | 45.21 | 1,853.61 | 452.13 | 18,537.33 |
| I-REAP | 100 | 4,100.00 | 5.6 | 229.6 | 32.5 | 1,332.50 | 30.84 | 1,264.44 | 168.94 | 6,926.54 |
| I-SUPPORT | 24 | 984 | - | - | 6 | 246 | - | - | 30 | 1,230.00 |
| Sub Total | 500 | 20,500.00 | 7 | 287 | 87.28 | 3,578.48 | 76.05 | 3,118.05 | 670.33 | 27,483.53 |
| Front End Fees | 1.25 | 51.25 | - | - | - | - | - | - | 1.25 | 51.25 |
| TOTAL | 501.25 | 20,551.25 | 7 | 287 | 87.28 | 3,578.48 | 76.05 | 3,118.05 | 670.33 | 27,534.78 |

Note: Foreign exchange used is at USD1 = Php41

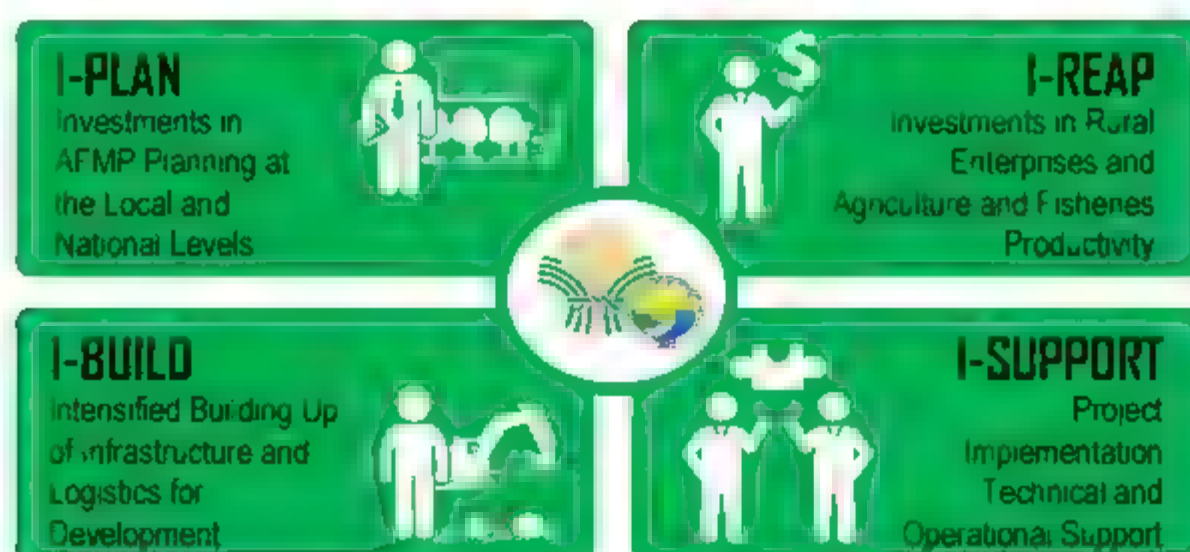


Figure 8. PRDP's Major Components

² Per Project Appraisal Document (PAD).

Overall Physical Progress

The overall physical progress of implementing the PRDP as of the end of 2017 stands at 59 percent. This translates to an increase of 31 percent from the 28 percent progress of the project in 2016. This progress, however, falls short by 5 percent to reach the 64 percent cumulative target ending 2017 (Figure 9).

For CY 2017, Component 2 (I-BUILD: Rural Infrastructure Development) accounted for the highest progress among all components at 78 percent. This can be attributed to the large number of subproject (SP) proposals approved for financing during the formative years of the project that were already implemented, operationalized, and maintained in 2017.

Component 3 (I-REAP: Enterprise Development), on the other hand, accounted for

the least physical progress at 13 percent due to the low number of SP proposals received by the project, particularly in years 2014 to 2015 from the LGUs in providing assistance to various proponent groups (PGs) operating agri-fishery enterprises, as well as bottlenecks in the procurement process encountered by implementing LGUs.

In order to address these concerns, the project conducted a series of orientation not just for Provincial LGUs but also for Municipal LGUs in order to increase their awareness about the project and encourage them to submit project proposals. Further, coaching and mentoring sessions with LGU Bids and Awards Committees (BAC) were initiated in order to familiarize them with the Harmonized Procurement Guidelines set by the World Bank and address procurement bottlenecks for better and faster implementation of approved projects.

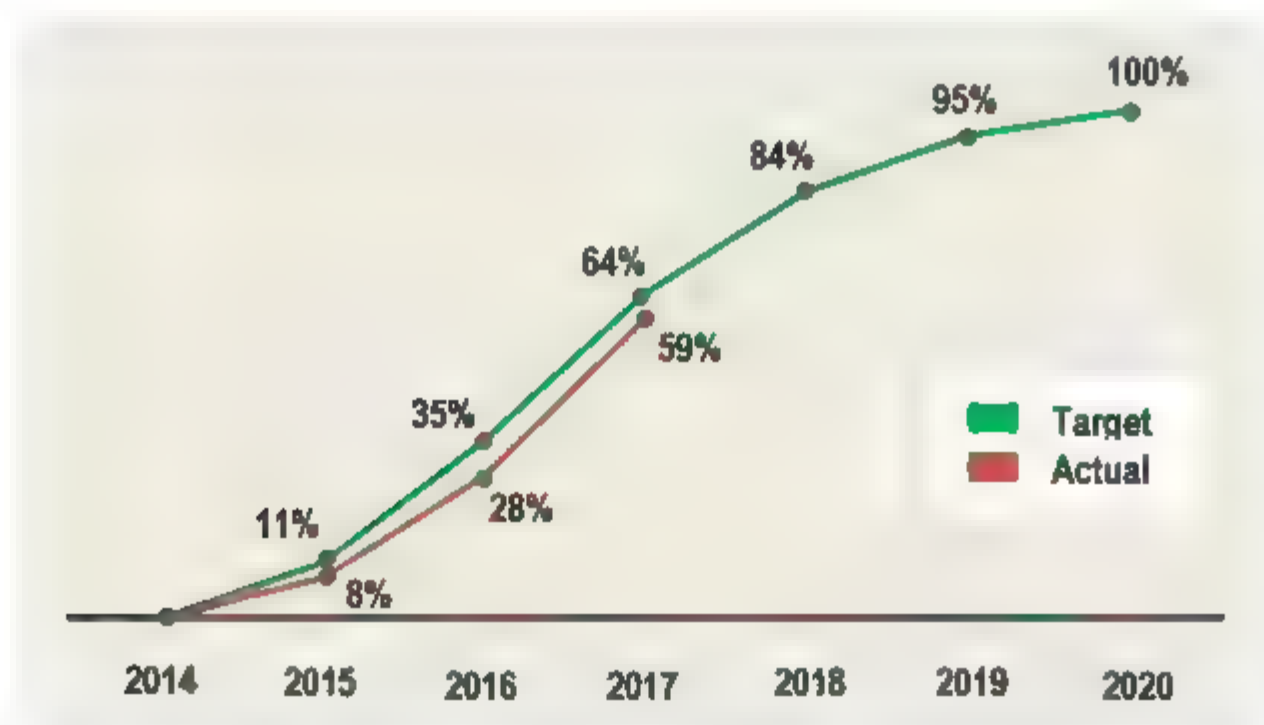


Figure 9. PRDP Cumulative Annual Physical Progress (as of December 2017)

Overall Financial Progress

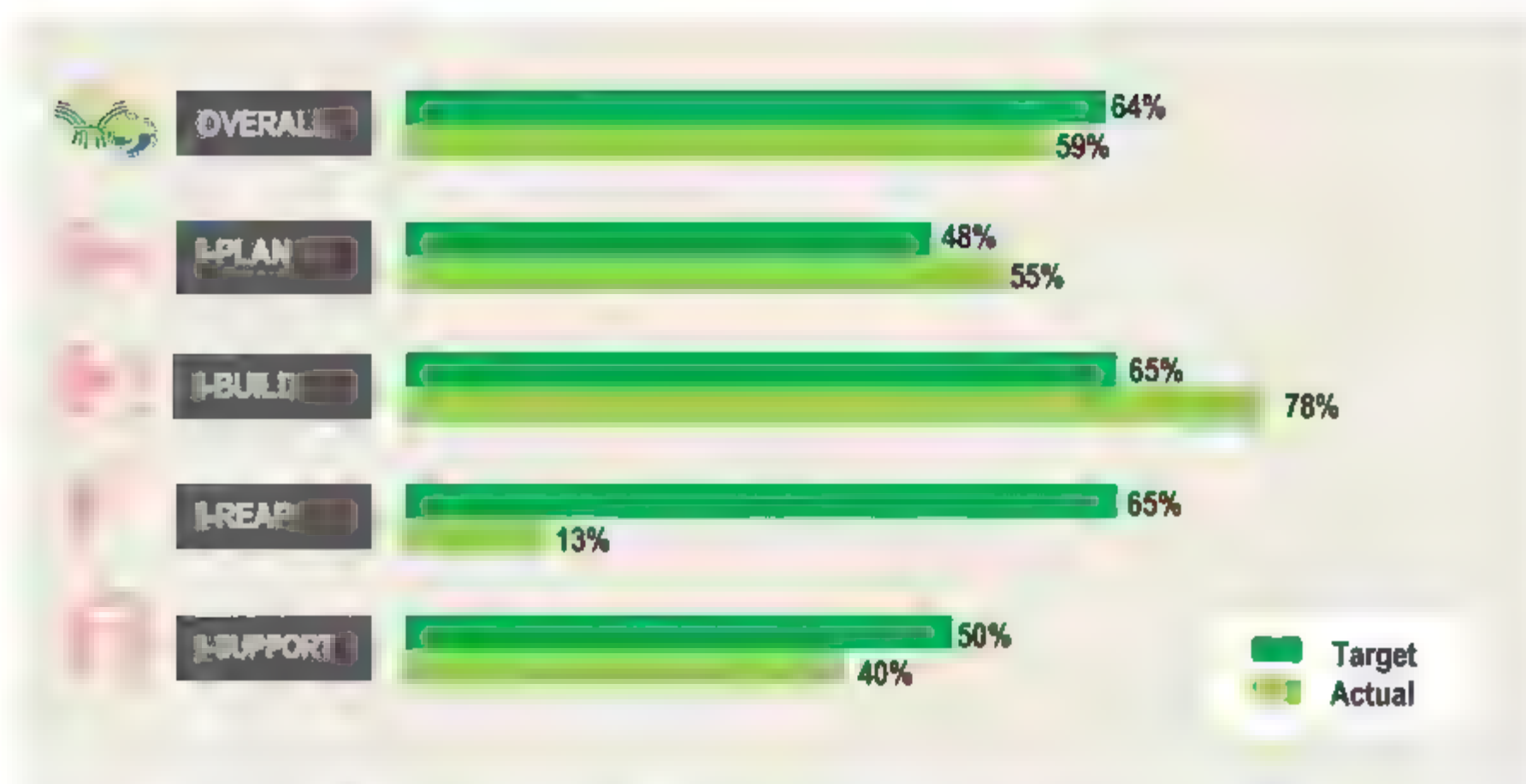


Figure 10. PRDP Cumulative Annual Physical Progress by Component (as of December 2017)

Since the project's commencement in December 2014, the DA has already received a total allotment of Php 24.08 billion from the Department of Budget and Management (DBM) to implement the PRDP. Of this amount, Php 20.48 billion came from Loan Proceeds (LP) and Php 3.6 billion as counterpart of the Government of the Philippines (GOP).

Of the said allotment, the project has obligated Php 22.96 billion (95 percent) composing of Php 19.45 billion LP (95 percent of LP allotment) and Php 3.53 billion GOP (97.5 percent of GOP allotment). The disbursements³ so far amounts to about Php 7.1 billion (Php 5.65 billion LP and Php 1.45 billion GOP), which accounts for 30.9 percent of the total obligations.

³ The disbursement of obligated funds entails multi-year particularly in the case of subprojects (rural infrastructures and enterprise development) with the procurement and actual implementation taking at least two years. Thus, the gap between the obligations and disbursements becomes large but would be narrowed moving to closing of the project in May 2021.

I-PLAN. The efforts of mainstreaming and harmonizing processes and tools are becoming more evident in the agriculture sector as manifested in the notable reforms in the way the Department is doing business. The institutionalization of a harmonized planning and budgeting guidelines adopted by all bureaus, attached agencies, banner programs, and RFOs of the DA has established a stronger linkage of the national strategic objectives with the regional and local planning and strategies for agriculture development.

The integration of science-based tools such as the Vulnerability and Suitability Assessment (VSA), expanded VSA (e-VSA), and Value Chain Analysis (VCA) resulted in significant contributions in establishing technical guidelines and criteria for a systematic investment identification and prioritization in the Project. These tools have been instrumental in the commodity-based planning approach at the local level through the formulation of the Provincial Commodity Investment Plan (PCIP).

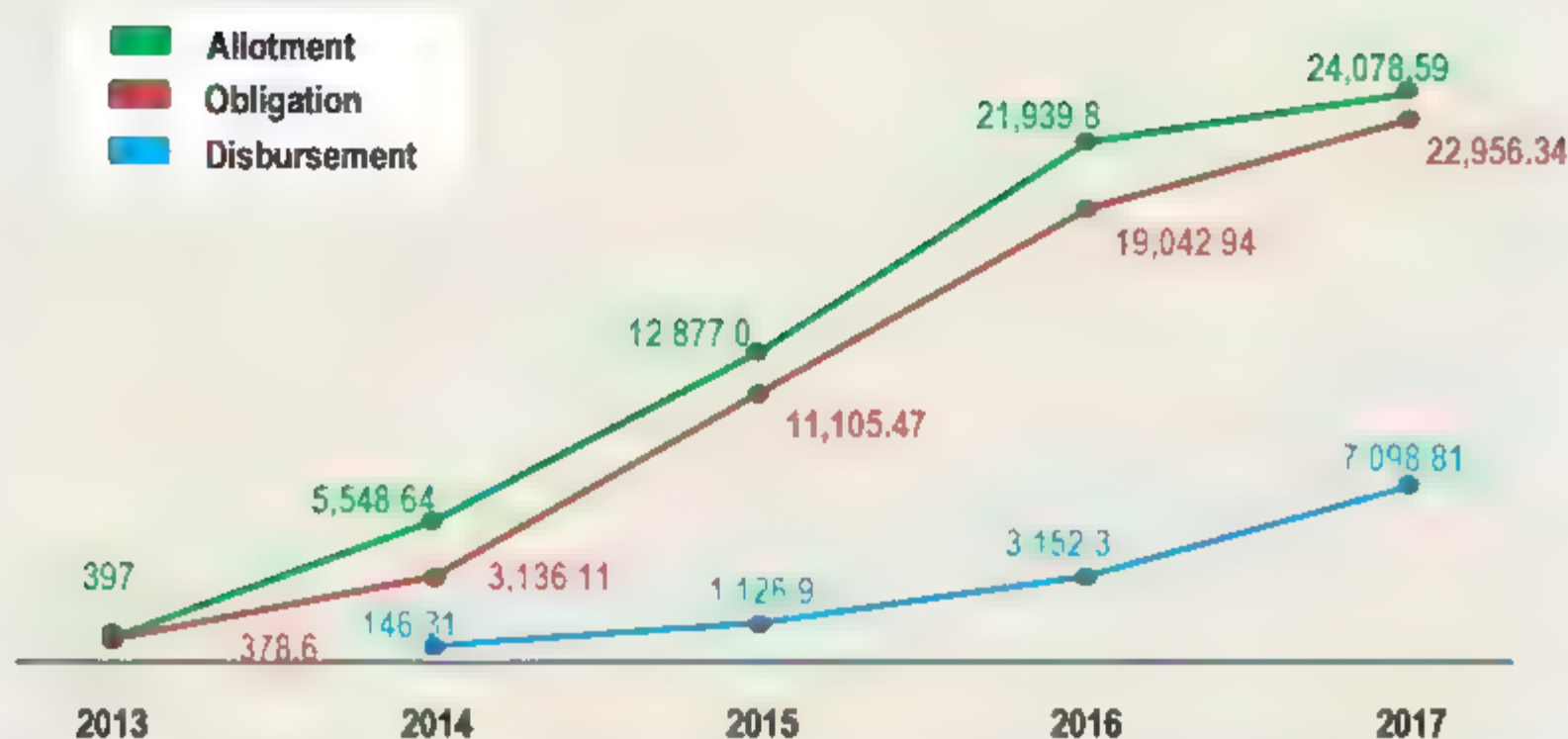


Figure 11. PRDP Cumulative Annual Financial Progress as of December 2017 (in million pesos)

The PCIP serves as the main reference and basis for technical support and convergence efforts with the regional agencies and the LGUs for agricultural development. In addition, provincial LGUs utilize their respective PCIPs as basis for their budgeting strategy in their annual investment plan as well as their reference for lobbying funding support from other collaborating agencies. Continued efforts are being undertaken for the mainstreaming of PCIP into their local planning processes with

the aim of encouraging LGUs to put greater priority investments and continued commitment for agriculture development.

I-BUILD. Midway through its implementation period, the Project has managed to commit utilization of the entire Php18.17 billion allocation for financing rural infrastructures under the I-BUILD Component.

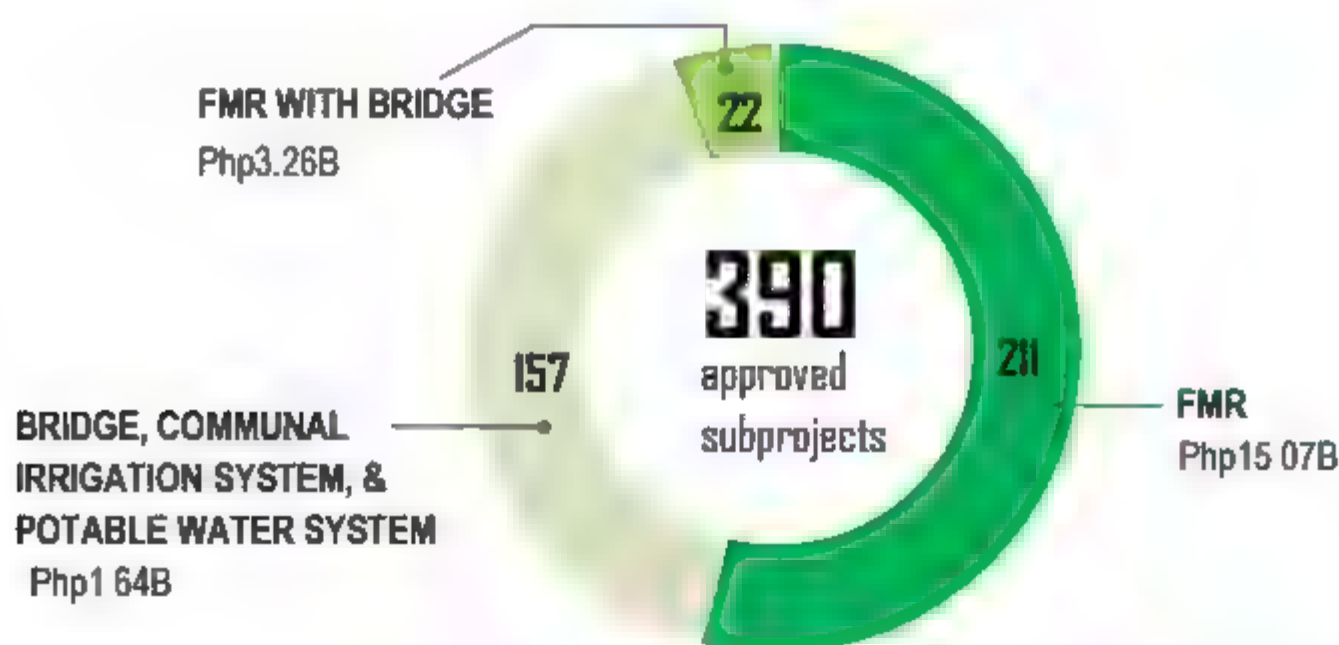


Figure 12. I-BUILD Component Subprojects Approved (By Type)

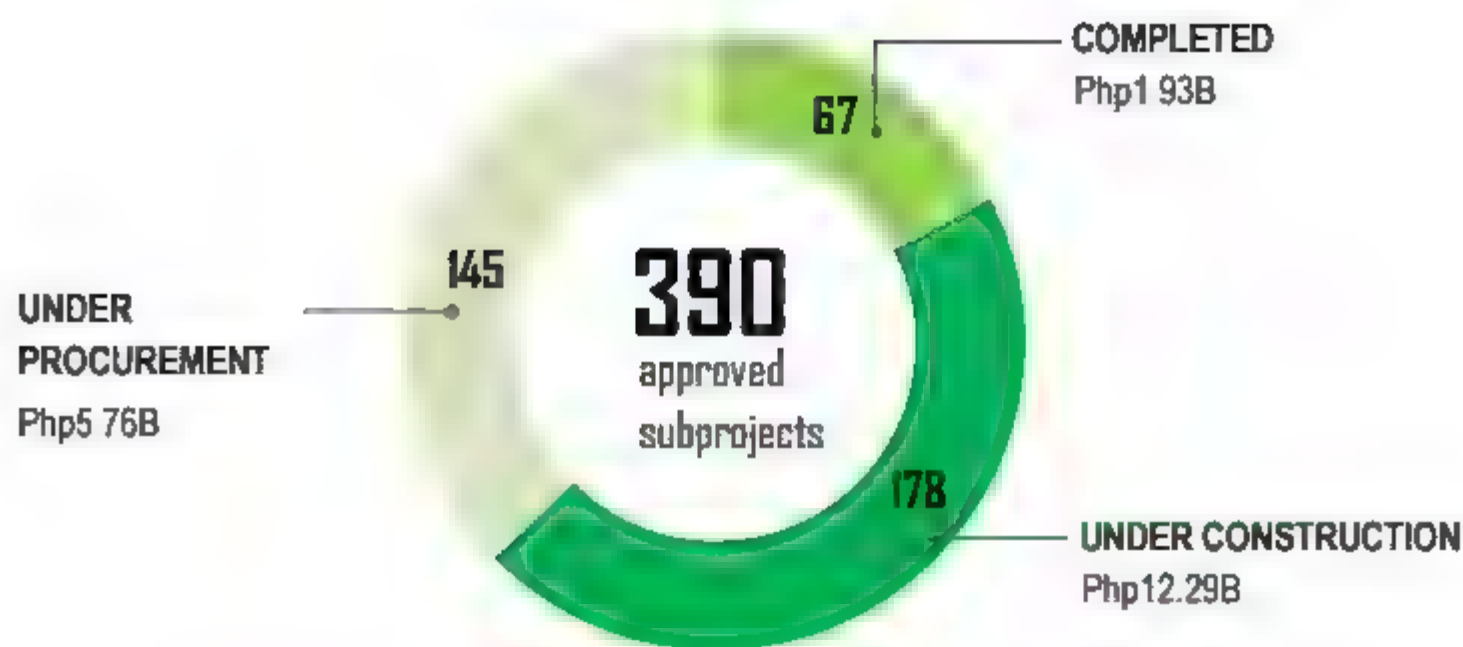


Figure 13. Status of I-BUILD Component Subprojects (as of December 2017)

To accommodate other infrastructure and logistics development projects, portion of funds allocated to the I-REAP Component was realigned to the I-BUILD Component. This increased the total allocation for financing rural infrastructures from Php18.17 billion to about Php20.6 billion. As of end of 2017, the project has approved funding for 390 subprojects worth Php19.97 billion, which constitutes 97 percent of the Php20.6 billion allocation of the I-BUILD Component. The remaining amount – roughly Php63 million – shall be used for financing additional cost of some approved SPs as a result of variation orders (VOs) and financing other types of infrastructures apart from FMRs such as postharvest facilities and trading posts, among others.

The approved SPs are largely comprised of FMRs with 211 SPs amounting to about Php15.07 billion (75 percent of total cost of approved SPs) followed by 22 FMRs with bridge costing Php3.26 billion (16 percent). The rest of infrastructure SPs (bridge, communal irrigation system, and potable water system) comprise the remaining 9 percent of the total cost of approved SPs.

Of the approved subprojects, 67 SPs amounting to Php1.93 billion were already completed; while 178 SPs costing Php 12.29 billion are under construction and 145 SPs worth Php5.76 billion are under procurement.

I-REAP. The arrangement in the implementation of enterprise development investments facilitates the increased involvement of farmer and fisher communities. As of 2017, the Project has engaged 853 proponent groups with about 114,676 members. Most of the types of value chain-linked enterprises supported by the Project are 455 micro enterprises amounting to Php471.27 million, followed by 89 small enterprises worth Php702 million, and 22 medium enterprises costing Php386.32 million.

A total of 566 enterprise subprojects worth Php1.56 billion that comprise production, marketing, processing, trading and consolidation facilities have already been approved for funding. Of these, 132 SPs amounting to Php132.26 million are already completed, 150 SPs (Php379.98 million) are under implementation, and 284 SPs (Php1.05 billion) are undergoing procurement.

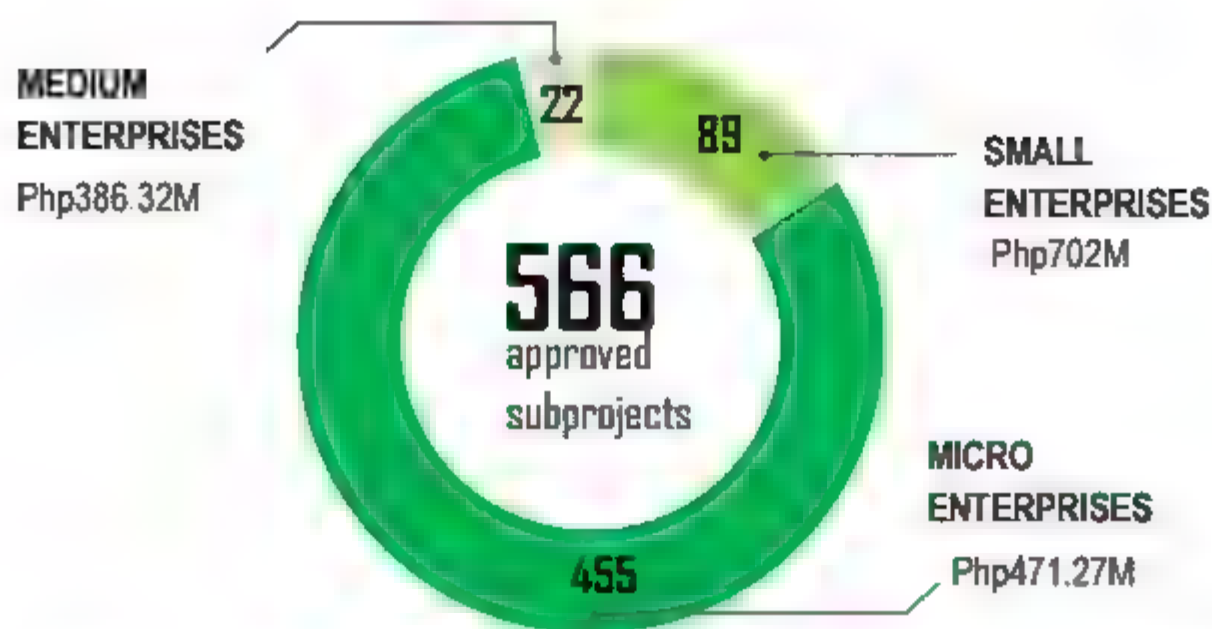


Figure 14. I-REAP Component Enterprise Subprojects Approved: Type of Beneficiary

I-SUPPORT. The Project Support component performs its overarching role in providing support for effective implementation of the planning and investment components of the Project. It has taken the lead in leveraging institutional reforms through mainstreaming of the various project innovations and enhancement geared towards meaningful discussions on sustainable mainstreaming mechanisms and advancing the transfer of knowledge, skills, and information. Efforts on establishing collaborations and partnership with various concerned DA offices are also

underway such as the harmonization of various commodity road maps with the DA-HVCDP. Once the right mechanisms are in place, the Project anticipates replicating the mainstreaming activity in other DA regular programs beginning mid-2018 and full-blown institutionalization shall be undertaken such that these tools and processes become fully functional and effective in the overall DA operations towards end of the Project in 2020.

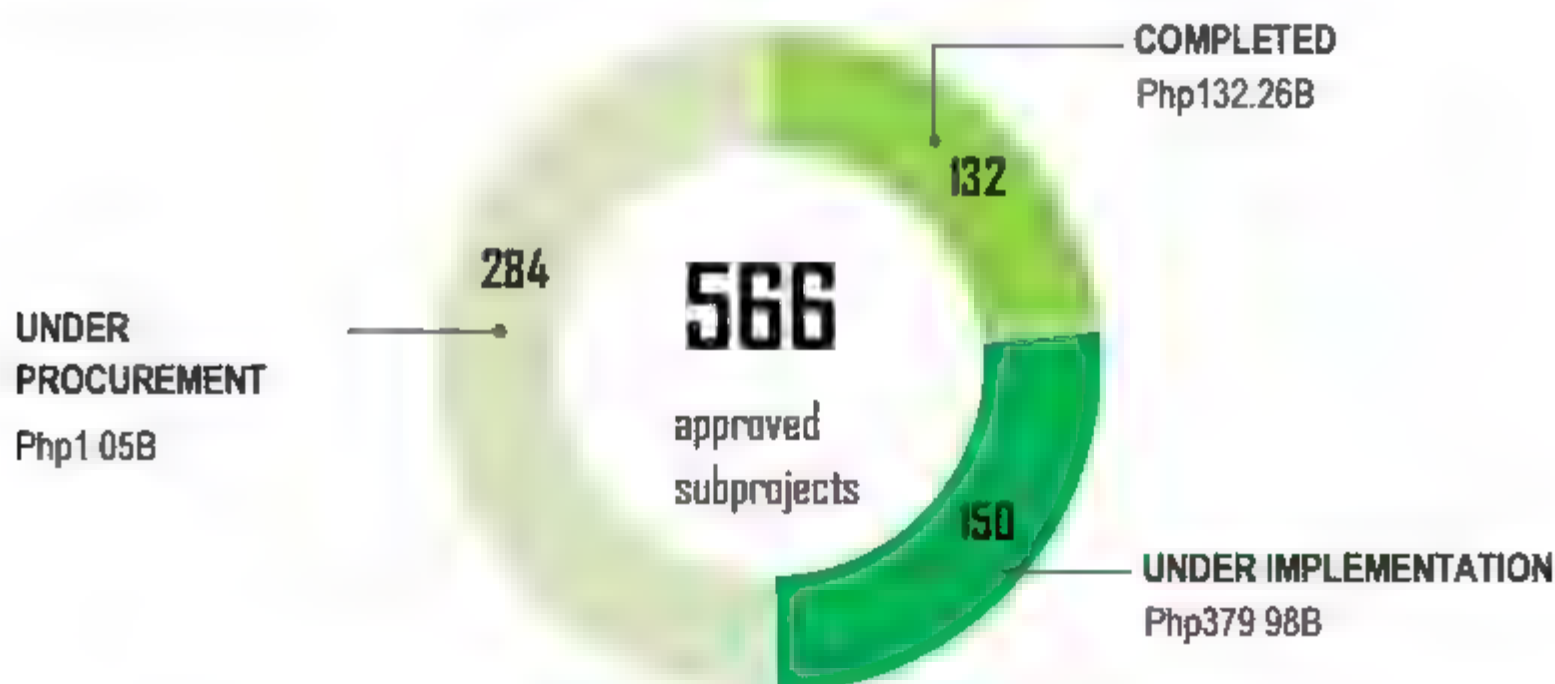


Figure 15. Status of I-REAP Component Enterprise Subprojects (as of December 2017)

As DA considers PRDP to be its platform in improving its service delivery, the management, with assistance from the World Bank, has been continuously making improvements in the Project's processes, guidelines, and strategies in

order to address some implementation issues encountered and eventually come up with better outcomes in the coming periods.

SOCSKSARGEN Area Development Project

The SOCSKSARGEN Area Development Project (ADP) is a special project of the DA aimed at sustaining and championing initiatives that will spur growth with equity by implementing projects and policies in the region that address the basic social needs of marginalized sectors. This is in support of the national social reform and food security agenda and all other local and national projects that require integration and coordination at the sub-regional level. This shared initiative has been vital in the concerted effort of national government agencies, LGUs, private sector, and other stakeholders to tap and develop the agriculture and industrial potentials in the region and to sustain economic growth.

Food Security Program (CY 2017 Continuing Appropriation)

The Food Security Program, which is focused on the construction and provision of vital infrastructure such as postharvest facilities and other agri-support infrastructure and services, particularly the concreting and upgrading FMRs, funded a total of 18 FMR concreting projects in CY 2016 that were carried-over and implemented in CY 2017 (of these, 16 FMRs were the originally-funded projects, while two others were funded through the savings of CY 2016 appropriations). As of December 31, 2017, 31.06 kilometers have been completed, including a total of 10,530 linear meters of lined canal, benefiting a populace of 89,319. Only two

FMR projects remain ongoing: one FMR project (1.10 kilometers) under the original program and one FMR extension project (150 linear meters) funded through savings.

On the other hand, the ongoing implementation of an FMR project with bridge component funded in CY 2015 has remained suspended as a result of the flooding brought by heavy rainfall in Sultan Kudarat. During its second suspension on October 9, 2017, the project was already at 79 percent.

Riverbank Rehabilitation Project (Climate Change Mitigation/Adaptation Project)

In partnership with LGUs and People's Organizations, the distribution of bamboo hills

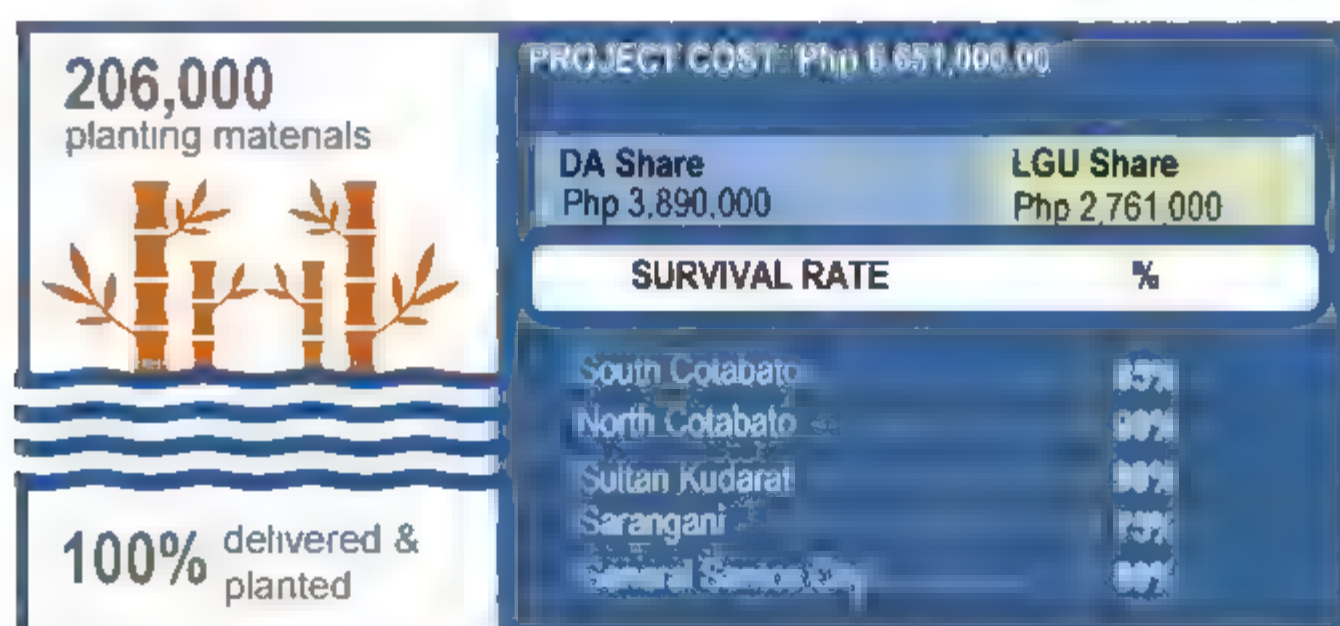


Table 16. Riverbank Rehabilitation Project

| AREA | PROJECT SITES |
|----------------------------|--|
| SOUTH COTABATO | Safari River, T'boli Banga River, Banga and Surallah Palian River, Tupi |
| NORTH COTABATO | Tinanan, Arakan and Meocan Rivers, Arakan Kabakan River in Pres. Roxas, Matalam, Magpet & Kabacan |
| SULTAN KUDARAT | Allah/Kapingkong Rivers, Isulan and Lambayong Allah River, Esperanza and Bagumbayan Kapingkong River, Tacurong City |
| SARANGANI | Lun Padidu River, Alabel and Malapatan, |
| GENERAL SANTOS CITY | Siguel River, Brgy. Bawing Conel River, Brgys. Conel and Olympog Silway-Klinan River, Brgys. Mabuhay and Sinawal Makar River, Brgy. San Jose Buayan River, Brgy. Upper Labay |

for the riverbank rehabilitation project was completed in February 2017 while the planting of bamboos along the riverbanks and adjacent sloping areas was completed in June 2017. The planting materials were funded by the DA, while the preparatory activities such as the clearing, weeding, planting, and the maintenance were shouldered by the LGU-partners.

Some of the major factors affecting the survival of the bamboos were the El Niño and heavy rainfall in 2017. The LGUs committed to continue the conduct of monitoring activities and replace the plants destroyed by natural calamities.

Capacity Building for Food Processors

Aside from the provision of postharvest facilities and equipment, the SOCSKSARGEN Area Development Project also aims for the promotion and adoption of efficient technologies and good farming and manufacturing practices on basic food and other priority and highly potential crops (i.e., coffee, palm oil, etc.) through the conduct of

technology demonstration and various capacity building activities.

A training was conducted on Food Safety and Good Manufacturing Practices (GMP)-cum-Orientation on Food and Drug Accreditation and Licensing for 30 small food processors and members of MSMEs in SOCSKSARGEN in November 2017. Said training was in partnership with the Food and Drugs Administration (FDA) in SOCSKSARGEN. The activity primarily aimed to help the MSMEs engaged in food processing in the region, particularly those processing coffee, cocoa, muscovado, and coco sugar, be equipped with knowledge on GMP and registration requirements for the accreditation of their food processing business with the FDA as these will support food safety and increase product marketing and reliability.

Strategic Agricultural and Fishery Development Zones (SAFDZ) Map Updating

The SOCSKSARGEN Area Development Project Office (ADPO) facilitated the review of the SAFDZ map outputs of Sultan Kudarat, North Cotabato, Cotabato City, and General Santos City

in 2017. The outputs will be further reviewed by the Regional SAFDZ Committee once reorganized within the first quarter of 2018. The concerned LGUs were advised on the adoption of the updated and refocused SAFDZ maps through their respective Sanggunian/Council by the second quarter of 2018.

This initiative, as mandated by RA 8435 or the Agriculture and Fisheries Modernization Act of 1997, ensures that lands identified as Strategic Agriculture and Fisheries Development Zones

(SAFDZ) within the network of protected areas for agricultural and agro-industrial development are efficiently and sustainably utilized for food and non-food production and agro-industrialization and effectively catalyze development in an environmentally and socio-cultural sound manner.

Special Area for Agricultural Development (SAAD)

The Special Area for Agricultural Development (SAAD) Program was conceptualized by Secretary Piñol during his term as Governor of North Cotabato from 1998 to 2007. The impact of this anti-poverty agriculture-related program in his home province could not be understated, uplifting North Cotabato and removing it from the top 10 poorest provinces of the country with the reduction in its poverty rate to 29 percent from 52 percent in 2007. It was inevitable for the SAAD to become one of the flagship programs for the agriculture sector upon his appointment as Secretary of the DA, expanding its scope to the national level in order to reach more marginalized farming and fishing communities.

The SAAD, as officially launched by the DA, will last for six years (2017-2022) in its implementation in the poorest provinces of the country through the provision of both social preparation and livelihood interventions. It is designed to complement the DA's National Banner Programs (i.e., Rice, Corn, High-Value Crops, Livestock, Fisheries, and Organic Agriculture) in two ways: a) by providing interventions in areas not reached by these Programs; and b) by providing interventions and schemes which are not part of these Programs. Thus, its target beneficiaries are:

- Poor households or groups earning below the poverty threshold per province who would like to engage, or are already engaged, in agriculture and fisheries;
- Farmers listed either in the updated Registry System for Basic Sectors in Agriculture (RSBSA), DA's database, farmers' registry of the Municipal

Agriculture Office (MAO), 4Ps beneficiaries, Indigenous People's group, or members of accredited farmer organization and cooperatives;

- o For those not formally organized, the group will be assisted by SAAD to be formally registered or accredited by the appropriate government authority, provided that these groups undergo training courses.
- Preferably those who did not receive similar interventions from DA in the last two years upon implementation.

The SAAD shall likewise assist beneficiaries to organize efficient production, postharvest, and marketing processes to improve gains from farming and fisheries, while encouraging the formation of cluster production and community agri-enterprises along existing supply chains.

Table 18 highlights the projects or interventions under SAAD for the first batch of priority provinces as of 2017.

Table 17. SAAD Interventions for the first batch of priority provinces as of 2017

| Areas covered beginning 2017 | Type of SAAD interventions/ projects and milestones as of 2017 |
|--|--|
| Apayao (Cordillera Administrative Region) (Php66.164 million) <ul style="list-style-type: none"> - Municipalities of Calanasan, Luna, Santa Marcela, Kabugao, Pudtol, Flora, Conner | <ul style="list-style-type: none"> - Integrated crop production, poultry production, market support project - Large and small ruminant production <ul style="list-style-type: none"> o Conduct of Farmer Livestock School Training (FLST) for 20 farmers in Barangay Butao in Calanasan to equip them with the fundamental knowledge on handling pigs o Delivered bucks and does in Barangay Aga in Pudtol and in Panay, Santa Marcela |
| Negros Oriental (Central Visayas) (Php 66.164 million) <ul style="list-style-type: none"> - Municipalities/ cities of Canlaon, Vallehermoso, La Libertad, Jimalalud, Tayasan, Ayungon, Bindoy, Mabinay, Manjuyod, Bais, Bayawan, Basay, Tanjay, Pampiona, Santa Catalina, Siaton, Amian, San Jose, Sibulan, Valencia, Dumaguete, Bacong, Dauin, Zamboanguita | <ul style="list-style-type: none"> - Canlaon: Cattle dispersal livelihood support project for 33 beneficiaries - Vallehermoso: Development of a Hillyland Farming project and provision of carabaos in non-mechanized farming systems for 80 beneficiaries - Jimalalud: Hillyland Agricultural Development project for 39 farmers - Ayungon: Enhancing Sustainable Productivity through provision of corn and rice seeds and organic fertilizers for 254 farmers - Manjuyod: Integrated Livelihood project for 163 farmers through vegetable, cut flower, rice, dairy, and livestock production - Sibulan: Mechanized Organic Vegetable and High-Value Fruits Production, Integrated Cacao Development Project, and Corn Mill Provision for 328 farmers - Valencia: Cocoa Production, provision of agricultural inputs for vegetable production, carabao dispersal, native chicken dispersal, dairy cattle production and dispersal, and provision of multi-purpose solar dryer concrete pavement facility for 440 beneficiaries - Zamboanguita: Productivity Enhancement through acquisition of farmer machineries and equipment for 60 farmers |
| Northern Samar (Eastern Visayas) (Php 66.034 million) <ul style="list-style-type: none"> - Municipalities of Catarman, Bobon, Allen, Biri, San Vicente, Lavezares, San Antonio, San Roque, Pambujan, Palapag, Gamay, Mapanas, Rosario, San Isidro, Capul, Victoria, Lope de Vega, | <ul style="list-style-type: none"> - Projects on vegetable gardening, swine fattening, and goat, poultry, and corn production - Enhanced Rice Production <ul style="list-style-type: none"> o Distributed 860 bags of certified rice seeds in various drop-off points for 7 municipalities o Distributed 76 sets of hand tractors and 35 units of irrigation pumps to farmers' associations from Bobon, |

| Areas covered beginning 2017 | Type of SAAD interventions/ projects and milestones as of 2017 |
|---|---|
| Mondragon, Silvino Lobos, San Jose, Laoang, Lapinig, Catubig | Catubig, Catarman, Las Navas, Pambujan, Laoang, San Roque, Mapanas, Mondragon, and Palapag <ul style="list-style-type: none"> Conducted training on rice production for 140 farmers in Gamay and Lapinig |
| Eastern Samar (Eastern Visayas) (Php 66.034 million) <ul style="list-style-type: none"> Municipalities of Jipapad, Artech, San Policarpo, Maslog, Oras, Dolores, Balangkayan, Hernani, General McArthur, Quinapondan | <ul style="list-style-type: none"> Projects on poultry and corn production Enhanced Rice Production <ul style="list-style-type: none"> Distributed 845 bags of certified rice seeds in various drop-off points for 10 municipalities Enhanced Vegetable Gardening <ul style="list-style-type: none"> A total of 1,440 farmers in various municipalities graduated from the conduct of 2016 Farmers' Field School (comprising of rice, corn, and high-value crop farmers) Distributed a total of 38 hand tractors and 17 units of pump engine sets to said graduates Swine Fattening Project <ul style="list-style-type: none"> Distributed 135 head of swine to 45 beneficiaries in Quinapondan Sustainable Goat Production <ul style="list-style-type: none"> Distributed 45 head of goat to 15 beneficiaries in Balangkayan |
| Western Samar (Eastern Visayas) (Php 66.034 million) <ul style="list-style-type: none"> Municipalities of Almagro, Basey, Calbiga, Calbayog, Catbalogan, Pinabacdao, San Jorge, Sto Niño, Sta Marganta, Sta. Rita, San Sebastian, Talalora, Tarangnan, Tagapul-an, Gandara, Jiabong, Motiong, Paranas, Pagsanghan, Daram, Hinabangan, Marabut, Matuginao, San Jose de Buan, Villareal, Zummaraga | <ul style="list-style-type: none"> Enhanced Rice Production <ul style="list-style-type: none"> Distributed 810 bags of certified rice seeds in various drop-off points for 9 municipalities Projects on vegetable gardening, swine fattening, and corn, poultry, goat, ube, ginger, and peanut production |
| Zamboanga del Norte (Zamboanga Peninsula) (Php 66.164 million) <ul style="list-style-type: none"> Municipalities/ cities of Rizal, Sibutad, Dapitan City, La Libertad, Mutia, Sergio Osmeña, Piñan, Polanco, Salug, Godod, Lilo, Tampilisan, Labason, President Manuel Roxas, Dipolog City, Katipunan, Manukan, Jose Dalman, Siayan, Sindangan, Kalawit, Leon Postigo, Baliguan, Siocon, Sirawai, Sibuco, and Gutalac | <ul style="list-style-type: none"> Projects on corn, vegetable, coffee, mushroom, peanuts, goat, cassava, layer and native chicken, upland rice, swine, and cacao <ul style="list-style-type: none"> Distributed durian and vegetable seeds to 500 beneficiaries Distributed OPV corn seeds to beneficiaries in Labason Delivered OPV white corn seeds and organic fertilizers for beneficiaries in Maing Kalawit Delivered 385 sacks of organic fertilizer to Kalawit |

| Areas covered beginning 2017 | Type of SAAD interventions/ projects and milestones as of 2017 |
|--|--|
| Lanao del Sur (Northern Mindanao) (Php 89.696 million) <ul style="list-style-type: none"> - Municipalities of Amai Manabilang, Bacolod Kalawi, Buadipuso-Buntong, Butig, Calanogas, Kapatagan, Lumbaca Unayan, Madamba, Madalum, Malabang, Marantao, Marogong, Masiu, Pagawayan, Sultan Dumalondong, Tubaran | <ul style="list-style-type: none"> - Projects on corn, vegetable, high-value crops, rice, livestock, duck, and cassava - Objectives include: <ul style="list-style-type: none"> o Increase alternative livelihoods o Attaining rice sufficiency for the province by 2019 through the adoption of hybridization and updating rice technology o Promote project sustainability and help improve the economic situation in conflict-affected communities through livelihood projects o Encourage investments in agriculture o Increase resilience to climate risks, disasters, pests and diseases |
| North Cotabato (SOCCSKSARGEN) (Php 50 million) <ul style="list-style-type: none"> - Municipalities of Alamada, Banisilan, Pigcawayan, Libungan, Midsayap, Pikit, Carmen, Aleosan, Pres. Roxas, Matalam, Mlang, Arakan, Antipas, Magpet, Kidapawan City, Makilala, Tulunan, Kabacan | <ul style="list-style-type: none"> - Projects on livestock, high-value crops, vegetables, corn, rice, and infrastructure <ul style="list-style-type: none"> o Turn-over various postharvest equipment for 200 farmers of Tulunan, Pikit, and Midsayap (corn shellers for corn farmers in Tulunan, corn shellers and rice threshers for farmers in Pikit, and 4WD tractor for farmers in Midsayap) o Distributed 140 bags of hybrid corn in Aleosan o Delivered 6,577 bags of fertilizer components for rice and corn production for farmers in Magpet |
| Maguindanao (ARMM) (Php 50 million) <ul style="list-style-type: none"> - Municipalities of Datu Odin Sinsuat, Daru Salibo, Rajah Buayan, Datu Abdullah Sangki, Paglat, Buluan, Sultan sa Barongis, Datu Saudi, Gen SK Pendatun, South Upi, Pandag, Mangudadatu | <ul style="list-style-type: none"> - Projects on livestock, vegetables, and machines <ul style="list-style-type: none"> o Distributed small farming equipment, tools, fertilizers, and rice and corn seeds |
| Sarangani (SOCCSKSARGEN) (Php 50 million) <ul style="list-style-type: none"> - Municipalities of Malungon, Alabel, Malapatan, Glan, Maasim, Kiamba, Marum | <ul style="list-style-type: none"> - Projects on upland rice, corn, vegetables, and livestock <ul style="list-style-type: none"> o Distributed 80 kilograms of upland rice seeds per farmer for the New Aklan Farmers Association o Provided knapsack sprayers o Conducted social preparation trainings o Launched organically-grown upland rice products produced by IP beneficiaries in Marum |

SAAD is also exploring a collaboration with the Turkish Cooperation and Coordination Agency (TIKA) through the *TIKAbuayan* Program to further strengthen its objective to provide affordable and sustainable food for marginalized farmers and fisherfolk. TIKA is a Turkish agency operating since 1992 aimed at helping Turkish-speaking nations regain social

structures and economic, cultural, and educational sustainability.

The *TIKAbuayan* Program aims to support sustainable production facilities across the Philippines for the benefit of IP communities and comparatively less-developed or disaster-prone areas.

FINANCIAL PERFORMANCE

DA's Budget in Php '000, 2016-2017

| | FY 2016 | FY 2017 |
|--|-------------------|-------------------|
| TOTAL APPROPRIATIONS | 48,942,572 | 45,947,043 |
| DISTRIBUTION PER PROGRAM | | |
| National Rice Program | 7,062,293 | 9,735,779 |
| National Corn Program | 2,249,424 | 2,826,854 |
| National High Value Crops Program | 2,918,639 | 3,968,179 |
| National Livestock Program | 1,172,565 | 1,537,453 |
| National Fishenes Program | 4,460,513 | 4,181,383 |
| Organic Agriculture | 634,998 | 817,936 |
| Farm-to-Market Roads | 7,377,167 | 6,000,000 |
| Quick Response Fund | 500,000 | - |
| Market Development | 128,576 | 233,351 |
| Other Support Program | 8,269,022 | 12,632,927 |
| Locally Funded Projects | 4,782,072 | 754,164 |
| Foreign Assisted Projects | 9,387,303 | 3,259,017 |
| DISTRIBUTION PER OFFICE | | |
| OSEC and its Bureaus and Attached Agencies | 23,555,876 | 19,662,212 |
| Cordillera Administrative Region | 1,106,454 | 1,267,787 |
| Ilocos Region | 2,108,618 | 2,029,240 |
| Cagayan Valley | 2,444,358 | 2,782,700 |
| Central Luzon | 2,295,873 | 2,687,456 |
| CALABARZON | 1,801,979 | 1,612,708 |
| MIMAROPA | 1,341,886 | 1,487,937 |
| Bicol Region | 1,488,378 | 1,792,118 |
| Western Visayas | 1,589,964 | 1,547,644 |
| Central Visayas | 1,221,782 | 1,343,395 |
| Eastern Visayas | 1,392,047 | 1,495,591 |
| Zamboanga Peninsula | 1,267,290 | 1,314,710 |
| Northern Mindanao | 1,585,713 | 1,658,526 |
| Davao Region | 1,468,196 | 1,607,836 |
| SOCCSKSARGEN | 2,333,386 | 1,824,181 |
| Caraga | 1,097,803 | 1,106,701 |
| ARMM | 842,969 | 726,301 |
| BUDGET PERFORMANCE | | |
| Allotment Received | 44,863,564 | 40,338,966 |
| Year-End Obligation Incurred | 38,644,178 | 38,208,058 |
| Utilization Rate as of End of Each Year | 86.14% | 94.72% |

Note: Allotment Received excludes Automatic Appropriations.

Directions and Way Forward

Commitments for 2017 and beyond

The Philippine Development Plan 2017-2022 is anchored on the long-term vision and aspirations of Filipinos for the country and for themselves in the next 25 years as painted in the *AmBisyon Natin 2040*. The *AmBisyon* sees every Filipino enjoying a *matatag, maginhawa, at panatag na buhay* by 2040 that likewise depends on achieving inclusive growth, a high-trust and resilient society, and a globally-competitive knowledge economy by 2022.

Pagbabago (or inequality-reducing transformation) is identified as one of the three pillars⁴ upon which the foundation for more inclusive growth, a high-trust and resilient society, and globally-competitive knowledge economy can be attained by 2022. It envisions an enabling environment ripe for greater economic opportunities both from the domestic market and the rest of the world, and where access to these opportunities will also be easier. In reducing inequalities in economic development opportunities, disadvantaged subsectors and people groups (such as small farmers and fishers and MSMEs) will be given priority so that they can participate in economic progress.

Chapter 8 of the PDP 2017-2022, "Expanding Economic Opportunities in Agriculture, Forestry, and Fisheries," contains the key principles under *Pagbabago*: expanding economic opportunities for those currently engaged in AFF products and increasing access economic opportunities for small farmers and fisherfolk who are typically subsistence producers and have limited market participation.

| OUTCOME STATEMENTS | STRATEGIES | INDICATORS |
|---|--|--|
| Expand Economic Opportunities in Agriculture, Forestry, and Fisheries (AFF) | Improve AFF productivity within the ecological limit | <ol style="list-style-type: none"> 1. Increase in the growth of Gross Value Added (GVA) in Agriculture, Forestry, and Fisheries 2. Increase in the growth in the value of production of fisheries 3. Increase in the growth in the value of agricultural and fishery exports 4. Increase in the yield of major commodities (palay, white corn, yellow corn, banana, coconut, pineapple, mango, sugarcane, cassava, coffee, cacao, rubber, abaca) 5. Increase in the volume of production of hog, goat, dairy chicken, chicken egg, vegetables, tilapia, bangus, seaweeds, tiger prawns, and white shrimp 6. Reduction in postharvest losses in rice and corn 7. Increase in the program area for perennial crops provided with technical support services (mango, coffee, cacao, rubber, banana, pineapple, cassava, abaca, coconut) 8. Increase in the program harvest area for staple crops provided with technical support services (palay, white corn, yellow corn) 9. Increase in the number of group beneficiaries provided with technical support services for livestock, poultry, and dairy 10. Increase in the number of fisherfolk provided with |

⁴ The two other major strategic outcomes are *Malasakit* (Enhancing the social fabric) where there is greater trust in public institutions and across all of society; and *Patuloy na Pag-unlad* (Increasing growth potential) where innovation will be further encouraged as well as adoption of modern technology, especially for production. These three pillars are cross-cutting and support the other interventions. (Source: Abridged PDP 2017-2022).

| OUTCOME STATEMENTS | STRATEGIES | INDICATORS |
|---|---|---|
| Increase access to economic opportunities of small farmers and fisherfolk | Increase AFF-based enterprises | production support services |
| | | 11. Increase in the number of group beneficiaries provided with agricultural and fishery machineries and equipment |
| | | 12. Increase in the growth in value of output of AFF-based enterprises |
| | Increase access of small farmers and fisherfolk to value chains | 13. Increase in the number of AFF-enterprises provided with technical support |
| | | 14. Increase in the growth of labor productivity of farmers and fisherfolk |
| | | 15. Increase in the share of small farmers and fisherfolk adopting new technologies to the total number of small farmers and fisherfolk trained with new technologies |
| | | 16. Increase in the number of new technologies |
| | | 17. Increase in the number of beneficiaries provided with extension services |
| | | 18. Increase in the share of small farmers and fisherfolk borrowing from formal credit sources to the total number of small farmers and fisherfolk availing credit |
| | Increase access of small farmers and fisherfolk to innovative financing | 19. Increase in the share of small farmers and fisherfolk with agricultural insurance to the total number of farmers and fisherfolk |
| | | 20. Increase in the number of small farmer/ fisherfolk organizations participating in institutional capacity-building on innovative financing |
| | | 21. Increase in the proportion of LGUs with established partnerships for the implementation of agricultural insurance to total number of LGUs |
| | Increase and protect the access of small farmers and fisherfolk to land and water resources | 22. Increase in the share of small fisherfolk with preferential access to municipal waters to the total number of registered small fisherfolk |
| | | 23. Increase in the number of registered fisherfolk provided with livelihood projects |

Formulation and Implementation of the Successor Agriculture and Fisheries Modernization Plan (AFMP)

The Agriculture and Fisheries Modernization Act of 1997 (AFMA) mandated the DA to formulate and implement an Agriculture and Fisheries Modernization Plan (AFMP) focused on food security, poverty alleviation and social equity, income enhancement and profitability, global competitiveness, and sustainability. The first AFMP was formulated and implemented by the DA in 2001, while the last covered the period 2011-2017.

The formulation of the successor AFMP 2018-2023 will be undertaken through the PRDP. Section I, Item A.5, of the PRDP Loan Agreement stipulates the updating of the AFMP by 2018.

The successor AFMP shall flesh out the goals and targets reflected in Chapter 8 of the current PDP, with strong linkage to the DA's strategies for a sound and sustainable agriculture and fisheries program, and other relevant policy directions set by the current administration.

MEDIUM TERM THRUSTS & PRIORITIES

1



Increase Productivity

- Increase competitiveness and productivity for rice and other priority commodities through the provision of strategic and catalytic interventions that will also showcase new technologies meant to increase yield of these commodities, and strengthening of extension support to maximize adoption of new technologies
- Increase investments in rural infrastructures (FMRs, SSIPs, postharvest facilities and equipment) in strategic areas and establish fish landings with appropriate cold chain facilities in key areas to reduce postharvest losses
- Implement conservation and regeneration of water resources through sustainable ecosystem management approach
- Provide options for seasonal farm and fishery workers whose incomes are irregular and who are most vulnerable to disaster risks

Intensify Development of Agri-Fishery-Based Enterprises

- Promote agribusiness and improve market access through conduct of market-related activities and capacity-building activities on value-adding activities (with focus on commodities with high market potentials)
- Provide market-related infrastructures such as trading posts/ centers, processing centers, cold storages, and processing equipment in strategic areas



2

3



Easy Access Credit Program for Farmers and Fisherfolk

- Implement an easy access financing program for farmers and fisherfolk with simple-to-comply and straightforward requirements, and with low interest rates
- Shift from providing subsidies to providing credit
- Expand the scope of agricultural insurance coverage

Intensify Support to the Rice Sector amidst Liberalization

- Continue providing support to the rice sector towards attaining competitiveness and increasing profitability (in view of the lifting of quantitative restrictions on rice in July 2017 and the pending approval of the amendments of the Tariffication Law)



4

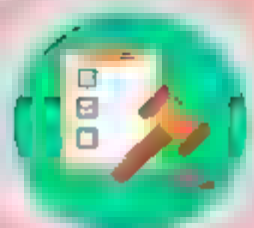
5



Commercialize Matured Technologies and Bolster Movement in R&D

- Maintain robust pipeline of R&D projects that are translated into technologies that will benefit small farmers and fishers

6

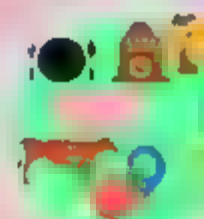


Strengthen Regulatory Capacity and Enforcement of Regulatory Laws in Partnership with Appropriate Government Law Enforcement Agencies

- Capacity building of personnel and provision of state-of-the-art equipment and facilities
- Streamline regulatory procedures
- Intensify development and enforcement of agn-fishery standards based on international standards
- Strengthen enforcement of regulatory laws including that of resource conservation policies

Development of the Livestock, Poultry, Dairy, Coffee, Cacao, and Abaca Industries

- Finalize roadmaps for these commodities which have ready markets but have low supplies
- Maintain freedom from certain diseases and use this condition to improve the country's share in the foreign market, particularly on halal food products
- Improve production of dairy milk from cattle, carabao, and goat
- Render full support to abaca farmers so that they can take advantage of existing and projected market opportunities



7

8



Increase Resiliency to Climate Change and Mainstream Disaster Risk Reduction and Management in all Programs, Activities, and Projects

- Mainstream climate adaptation measures in all of the DA's programs, projects, and activities
- Mainstream disaster risk reduction and management

Strengthening Partnership Mechanisms

DA, through its International Affairs Division (IAD), continues to pursue cooperations on agriculture and fisheries for the Philippines and its partners. Below are the highlights of some of the agreements that have been signed:

- PH-Russia (signed on May 25, 2017)

The MOU will strengthen the development of both countries' agricultural sectors through cooperation in the field of

agriculture, fisheries, and other related fields. Cooperation will be effected by provision of scholarships, joint research studies, conduct of activities to facilitate strategic market, and trainings, among

others. It will likewise help encourage agricultural investors to establish and operate commercial and agricultural investment and projects.

Both sides will form a Joint Working Group to implement the provisions of the MOU. As such, the Philippines will be proposing to convene the 1st Meeting of the Joint Working Group in the third quarter of 2018.

- **PH-Indonesia (signed on May 2, 2017)**

The main objective of the MOU is to promote cooperation in the development of agriculture and agro-industries of both countries through mutual consultation, exchange of technical assistance, and joint research on specific areas of agriculture.

Through the MOU, the Philippines-Indonesia Joint Agriculture Working Group (JAWG) was also reactivated which is an important dialogue forum that contributes in advancing and strengthening the country's bilateral relations with Indonesia (Indonesia being a major trading partner of the Philippines in the ASEAN region). However, agricultural trade with Indonesia has shown a huge imbalance in favor of the latter in the past few years. In this case, the MOU and the JAWG play a big role through which the Philippines can pursue its interests with them.

The third meeting of the JAWG was held on August 24, 2017 in Quezon City. The Philippines followed up on its application for registration of food testing laboratories and its request for import quota allocation for 2018 for Philippine shallots, bananas, and pineapples. The Philippines also relayed its additional sanitary and phytosanitary (SPS) import requirements for Indonesian coffee and rice.

- **PH-Myanmar (signed on March 22, 2017)**

The main objective of the MOU is to strengthen cooperation in the areas of food security in support of initiatives in agriculture, fisheries, food processing, and the Halal industry.

Areas of cooperation include promotion of investments through joint-venture arrangements, exchange of information related to the area of cooperation, and conduct of technical trainings for both sides. The Philippines will host the first PH-Myanmar JAWG meeting on July 31, 2018 in Manila to materialize the provisions stipulated in the MOU.

- **PH-India (signed on November 13, 2017)**

This MOU promotes technical cooperation in agriculture through collaborative activities and exchanges in the areas of rice production and processing, multiple cropping system, dryland farming systems, bio-organic farming, soil and water conservation and management, soil fertility, agricultural machinery, horticulture, agro-forestry, sericulture, dairy, livestock improvement, sugarcane technology, meat inspection system, postharvest handling, integrated pest management, cotton-growing technology and hybrid cotton breeding, research and development of crops, biotechnology, agricultural cooperatives, and other fields.

Due to the dynamic cooperation between these two countries, this MOU is in effect until February 2021. The Philippines will host the second JWG on Agriculture in May 2018 to strengthen cooperation between these countries.

- PH-France (signed on September 26, 2017)

The Administrative Arrangement (AA) will strengthen the development of both countries' agricultural sectors through cooperation in the field of agriculture, fisheries, and other related fields. Through this AA, the Philippines could further gain advanced knowledge and skills from France since it is the world's sixth largest agricultural producer and EU's leading agricultural power, accounting for about one-third of all agricultural land within the EU.

Specifically, this AA would benefit the Philippines in environmentally-friendly agricultural practices, strengthening of agricultural cooperatives, dairy industry, standardization of food safety training, laboratory capacity building, and sustainable rural development through geographic indications.

On September 27, 2017, the 1st Meeting of the Steering Committee on Agriculture was concluded identifying the following priority cooperation activities:

- a. Deployment of French expert to assist the ATI's initiative to develop a framework on the standardization of food safety trainings in the country;
- b. BSWM and Institut National de la Recherche Agronomique (INRA) collaboration on soil mapping;
- c. Possible inclusion of the Philippines as member of the "4 per mille 1000" initiative;
- d. Follow-through on the market access requests of France, particularly on apples, potatoes, and poultry products;
- e. Exchange of information on available relevant data for the

wholesale market feasibility study between Semmaris and the DA;

- f. Capacity-building activities on Geographical Indications (GI);
- g. NDA and French Ministry for Food and Agriculture (MAF) cooperation on dairy sector;
- h. Collaboration on the strengthening of Philippine agricultural cooperatives.

- DA-Allianz FASC's Contract for Insurance Coverage

This Agreement provides subscription to a medical insurance scheme of foreign service personnel available in the host country as stated in Section 73 of RA 7157 otherwise known as Foreign Service Act of 1991.

Aside from the DA, four other partner agencies have availed of this as they, too, recognize the advantage in subscribing to this scheme in terms of low premiums as compared to individual membership.

- PHilMech-KAMICO

The MOU on Technical Cooperation in Agricultural Mechanization Development is a cooperation agreement between PHilMech and the Korea Agriculture Machinery Cooperative (KAMICO). The MOU intends to promote and pursue scientific and technical cooperation in the field of agricultural mechanization through the following:

- a. Establishment of the Agricultural Mechanization Complex,
- b. Collaborative studies/ research on machinery development,
- c. Exchange of experts and/ or provision of technical support, and
- d. Conduct or facilitation of study tours, workshops, symposia, training courses, and exhibitions on subjects of mutual interest.

KAMICO, with its members of agricultural machinery manufacturers, are willing to share their expertise with their counterpart in the Philippines. The MOU signing was a highlight of the recent KIEMSTA 2016, the biggest agricultural mechanization trade show held in Cheonan City. The signatories are KAMICO Chairman Shin Gil Kim and PHilMech Executive Director Dr. Dionisio Alvindia.

The abovementioned agricultural mechanization complex will be a structure showcasing different machines and equipment. The complex could also become a training center for farm mechanization practitioners as well as farmers. For research and development, collaborative development of village-level machines and equipment will be useful for Filipino farmers.

Meanwhile, the Project Development Service (PDS) organized various agri-fishery development projects of the DA in 2017, resulting in the following accomplishments for the year:

1. Facilitated approval of two new projects for Official Development Assistance (ODA) in the form of grant:
 - a. National Food Consumption Quantification Study – approval-in-principle by the FAO of USD300,000 grant

- b. Enhancement of the Biosafety and Biosecurity Capabilities at the DA Agriculture Veterinary Diagnostic Laboratories – approval of an estimated project cost of Php230 4 million under the grant assistance of the US Defense Threat Reduction Agency (US DTRA).

This will be implemented by the DA through the BAFS, BAI, and the DA RFOs under the auspices of the Cooperative Threat Reduction Agreement (CTRA) between the Philippines and the USA, involving the establishment of a strong and functional diagnostic laboratory network. This network will be made up of the animal disease diagnosis and reference laboratory of six regional animal diagnostic laboratories in the DA RFOs in Cagayan Valley, Central Luzon, Central Visayas, Northern Mindanao, Davao Region, and SOCCSKSARGEN. The grant component consists of support for building and improvement of facilities of the laboratories, provision of diagnostic and analytical equipment, one-year provision of supplies and reagents/ consumables, calibration and repair of equipment, and training and capacity building for technical personnel and analysts.

2. Facilitated the endorsement of 17 projects to NEDA and/ or Development Partners (Table 18).

Table 18. Projects endorsed by DA-PDS to NEDA and/ or Development Partners

| Project Name | Proposed/ spearheaded by: |
|---|---|
| Rehabilitation of Aquaculture Production Irrigation Systems | BFAR-Ilocos Region |
| Special Areas for Agricultural Development (SAAD) Program | SAAD National Project Management Office |
| Establishment of the Center for Agri-Fisheries Mechanization Engineering Resource Network (Center for AFMechERN) | PHilMech |
| Introduction of Smart Farm as Pilot Project and Capacity-Building Project | BPI |
| Construction and Rehabilitation of Farm-to-Market Roads (FMR) Project | FMR Development Program Directorate |
| Strengthening Capabilities on Philippine Dairy Development and Regular Policy Analysis and Formulation | NDA |
| Philippine Sino-Center for Agricultural Technology-Technical Cooperation Program Phase III (PhilSCAT TCP III) | Project PhilSCAT Management Office |
| Improvement of Seed Warehouses to Prolong Shelf Life and Maintain Quality of Rice Seeds | PhilRice |
| Updating of the Philippine Soil and Land Resources Information (PHILSLRI): A Baseline for the Integration, Management, and Dissemination of Philippine Soil and Land Resources Data | BSWM |
| Expansion and Improvement of the General Santos Fish Port Complex | PFDA |
| Nationwide Fish Ports Project III | PFDA |
| Rehabilitation/ Improvement of the Zamboanga Fish Port Complex | PFDA |
| Farmers and Fisherfolk Database and Farm Geo-Referencing | DA-FOS |
| Philippine Agricultural Modernization Project | DA-FOS |
| Establishment of Mindoro Multi-Grain Processing Center | DA Western Visayas |
| Establishment of Food Animal and Animal Products Traceability and Quality Evaluation Systems | BAI and NMIS |
| KOICA Rice Processing Complexes PPP Project (feasibility study preparation) | PHilMech |

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APPENDICES

Appendix A. Status of Operational Agri-Pinoy Trading Centers (APTCs)

| APTC | Location | Cost | Updates |
|--|--|--------------------|---|
| Benguet APTC | Strawberry Fields, La Trinidad, Benguet | Php 656 million | Started operations on November 15, 2015, Total volume traded in 2017: 71.22 MT, No. of farmers benefitted: 4,404, Primary commodities traded: chayote, Chinese cabbage, potatoes, carrots, cauliflower, broccoli, lettuce, tomato, radish, sweet potato, cucumber and spinach |
| Pangasinan APTC | Poblacion, Urdaneta City, Pangasinan | Php 29.27 million | Open 24 hours daily; Avg. monthly volume traded in 2017: 3,000 MT, 2 slots are allocated, free of charge, to the Urdaneta City Organic Farming Rice Corn Vegetable Growers Association, Inc. (300 members) (10 - 15 MT/month); Primary commodities traded: Lowland Vegetables such as eggplant, tomato, ampalaya, sitao, okra, upo, squash |
| Isabela Multi-Commodity APTC | Roxas, Isabela | Php 121.30 million | Avg. monthly volume traded in 2017: 22.15 MT (fruits and vegetables), No. of animals slaughtered in 2017: 23,644 head, No. of animals auctioned/ traded in 2017: 976 head No. of farmers benefitted: 34 farmers, No. of traders benefitted: 18 traders |
| Regional Organic Trading Center (ROTC) | Bagabag, Nueva Vizcaya | Php 18.10 million | Assists organic farmers from the region in the marketing of organically-produced fruits and vegetables. Serves as display area and training center. |
| Nueva Vizcaya Agricultural Terminal (NVAT) Marketing System and Support Facilities Upgrading Project | Almaguer North, Bambang, Nueva Vizcaya | Php 55.4 million | Volume traded: 1,071 MT No. of farmer groups and/or traders benefitted: 35 |
| Nueva Ecija APTC (NEAPTC) | Caalibang-bangan, Cabanatuan City, Nueva Ecija | Php 80 million | Caters to lowland vegetables, Total volume traded in 2017: 35.28 MT (valued at Php 721,348.00) |
| Camarines Norte APTC (CNAPTC) | Sitio Mat-I, Brgy. Sto. Domingo, Vinzons, Camarines Norte | Php 44.23 million | Open from Monday to Saturday, 5:00 am to 7:00 pm; Total volume traded in 2017: 565.11 MT (valued at Php 8,247,436.96); Number of participating farmers: 362 Top commodities traded: squash, camote, upo, eggplant, sitao, ampalaya, okra, sita |
| Bohol APTC for Livestock Project (Integrated Livestock Auction and Slaughter house) (BoAPTC) | Livestock Auction Market - Poblacion, Sagbayan, Bohol Slaughterhouse - Sta. Catalina, Sagbayan, Bohol | Php 22.21 million | Livestock Auction Market is operational, - Operates twice a week (6-8 hours) - Large Animals - Friday - Small Animals - Sunday Number of animals traded: Cattle - 492 heads Carabao - 424 heads Goat - 52 heads Swine - 619 heads |

| APTC | Location | Cost | Updates |
|--|---|-------------------|---|
| | | | <p>Poultry –189 heads</p> <p>No. of farmers benefitted: 135 handlers/raisers</p> <p>Slaughterhouse has already been constructed with some equipment and materials for procurement.</p> |
| Dalaguete APTC | Brgy Mantalongon, Dalaguete, Cebu | Php 17.57 million | <p>Operates for 20 hours (opens at 2:00 AM and closes at 10:00 PM),</p> <p>Volume traded: 1001 MT,</p> <p>No. of farmers benefitted: 400 farmers,</p> <p>Caters to upland and lowland vegetables,</p> <p>Market day = Thursday,</p> <p>Peak months of operation December to February.</p> |
| Siargao Islands Agri-Pinoy Trading Center (SIAPTC) | Dapa, Siargao Island, Surigao del Norte | Php 29.63 million | <p>Volume traded: 394.04 kilograms,</p> <p>No. of farmers benefitted: 10 individual farmers and 3 farmer associations.</p> <p>The facility was affected by Typhoon Vinta in December 2017, affecting its trading operations.</p> |

Source: DA-AMAS

Appendix B. Official List of Third-Party-Certified Organic Operators as of December 31, 2017⁵

| # | REGION | COMPANY NAME | Address | PRODUCT/S | Certificate Expiration (YYYY-MM-DD) | Organic Certifying Body |
|----|--------|---|--|---|-------------------------------------|-------------------------|
| 1 | CAR | AAU Organic Farm | La Trinidad, Benguet | Assorted vegetables (Pechay, Lettuce, Tomatoes, Sitao) | 2018-12-18 | OCCP |
| 2 | CAR | Abe Farm | Lamut, Ifugao | Soybeans, Pechay, Tomato, Cacao, Banana | 2018-12-18 | OCCP |
| 3 | II | Abrasa Multi-Purpose Cooperative | National Highway, Andres Bonifacio, Drifun, Quinno | ECO-V Plant Supplement | 2018-07-06 | OCCP |
| 4 | VII | AHCIL Laboratories, Inc. | Brgy Tingub, Mandaue City, Cebu | Antica Organic Fungicides and Bactericides, Ahcil Insect Control-(AICON), Botanical Insecticide (BCA) | 2018-03-21 | OCCP |
| 5 | V | Albay Pili and Cacao Industry Association, Inc. (APCIA) | Cabangan, Camalig, Albay | Roasted pili, Roasted Salted Pili Nuts, Roasted Pili nuts with Himalayan Salat, Pili | 2018-06-17 | OCCP |
| 6 | VII | Amebocyte Cell Co., Inc. | Brgy San Jose, Catmon, Cebu | Organic Plant Supplement (Foliar) | 2018-06-17 | NICERT |
| 7 | IV-A | Assenture Industries Inc. | Brgy San Vicente, Sto. Tomas, Batangas | Hyper Kompost (Potassium Humate), Hyper Amino (Amino Acid) | 2018-04-10 | OCCP |
| 8 | V | Balatan Organic Farmers and Fisherfolks Agriculture Cooperative (BOLAFFACO) | Tapaya, Balatan, Camannes Sur | Vegetable crops, perennial crops, root crops, legumes, herbs, live poultry, swine, goat | 2018-11-17 | OCCP |
| 9 | CAR | Barangay Loacan Organic Farmers (BLOFA) | Loacan, Itogon, Benguet | Assorted Vegetables | 2018-12-16 | OCCP |
| 10 | CAR | Bauko Organic Practitioners Credit Cooperative (BOPCC, formerly Bauko Practitioners Association Inc.) | Bauko, Mt. Province | Vegetable crop, legumes, root crops, perennial crops, milled rice (manual) | 2018-12-17 | OCCP |
| 11 | VIII | Bendicar Farm Agri-ecotourism | Brgy Buac Gamay, Sogod, Southern Leyte | Vegetables and Fruits (Fresh Produce) | 2018-12-19 | NICERT |
| 12 | NCR | Bounty Fresh Food Incorporated | Caloocan City, Metro Manila | Seasons Organic Fertilizer | 2018-03-13 | OCCP |
| 13 | VI | BPI-National Crop Research and Development Center La Granja | Brgy La Granja, La Carlota City, Negros Occidental | Seeds-Corn, peanut and vegetables | 2018-07-05 | OCCP |
| 14 | NIR | Buro-buro Springs Black Pepper, Flowers & Vermi Farm | Brgy Concepcion, Talisay City, Negros Occidental | Organic Fertilizer (OM Plus) | 2018-12-28 | NICERT |
| 15 | VIII | Canaan Hill Farms | Brgy, Uson, Caibiran, Biliran, Leyte | Vegetables and Fruits (Fresh Produce) | 2018-12-19 | NICERT |
| 16 | XIII | Caraga Agricultural Business Corp. | Purok 2, Pianung, Butuan City | Organic Fertilizer (AminoPlus) | 2018-08-06 | NICERT |

⁵ List excludes entries whose certificates have expired within 2017. Source: DA-BAFS.

| # | REGION | COMPANY NAME | Address | PRODUCT/S | Certificate Expiration (YYYY-MM-DD) | Organic Certifying Body |
|----|--------|---|--|---|-------------------------------------|-------------------------|
| 17 | CAR | Cee Jee Savers Garden | Lusong, Buyacaoan, Buguias, Benguet | | | OCCP |
| 18 | NCR | Classique Herbs Corporation | 1803 Global Corporate Center, Julia Vargas Ave., San Antonio, Pasig City | CHC Agntech Microbial Inoculant | 2018-03-31 | OCCP |
| 19 | CAR | Cosmic Farm | La Trinidad, Benguet | Vegetables & Herbs | 2018-10-09 | NICERT |
| 20 | IV-A | Costales Nature Farms | Brgy. Gagalog, Majayjay, Laguna | Vegetables and Herbs | 2018-06-22 | NICERT |
| 21 | III | CRC Chansma Nature Farms | San Roque, Magalang, Pampanga | Vegetables and Herbs | 2018-02-26 | NICERT |
| 22 | II | DA-Cagayan Valley Research Center RFO 2 (CVRC) | San Felipe, Ilagan City, Isabela | Assorted lowland vegetables | 2018-07-04 | OCCP |
| 23 | II | DA-Southern Cagayan Research Center (SCRC) | Minanga Norte, Iguig, Cagayan Valley | Assorted Vegetables and Seeds | 2018-06-06 | OCCP |
| 24 | IV-B | DA-Regional Integrated Agricultural Research Center (RIARC) | Brgy. Alcate, Victoria, Oriental Mindoro | Live native pig, Palay seeds, perennial crops, vegetable crops | 2018-11-24 | OCCP |
| 25 | XII | Deo's Farm and Organic | Sitio Magoncia, Kibudoc, Matalam, North Cotabato | Deo's Farm Organic Fertilizer | 2018-08-01 | OCCP |
| 26 | IV-B | DJMV Farm | Sitio Iligan, Pnagsabangan I., Naujan, Oriental Mindoro | Rice, Milled Rice | 2018-07-07 | OCCP |
| 27 | IV-A | Domingo Perma Farm Inc (DPFI) | San Roque, Antipolo City, Rizal | Assorted Vegetables | 2018-03-21 | OCCP |
| 28 | VII | Dublin Bio-Industries | Brgy. Tominjao, Daan Bantayan, Cebu | Seaweed-based Foliar Fertilizer (Freegrow) | 2018-12-28 | NICERT |
| 29 | NCR | Dynapharm International Philippines, Inc | Ortigas Center, Pasig City | Power Grow Foliar Fertilizer | 2018-03-08 | OCCP |
| 30 | XI | Eco Anzen Solutions Corporation | Bangkai, Davao City | Yoeki AS Biofungicide | 2018-05-22 | OCCP |
| 31 | VI | FamilyFarms, Inc | Mainuswagon, Brgy. Busay, Bago City, Negros Occidental | Unpolished Milled Rice/ Well-Polished Milled Rice | 2018-12-14 | NICERT |
| 32 | NIR | Fresh Start General Merchandising | Hda. Maquina, Brgy. Rizal, Silay City, Negros Occidental | Vegetables and Herbs | 2018-01-26 | NICERT |
| 33 | IV-B | Gabutero Organic Farm Supply | Brgy. Labonan, Bongabong, Oriental Mindoro | Vermicompost plant supplement, unmilled rice, perennial crops, vegetable crops | 2018-11-23 | OCCP |
| 34 | XII | Gensan Bell Marketing | Udagni, Conel, General Santos City, South Cotabato | Green Harvest Organic Fertilizer | 2018-08-01 | OCCP |
| 35 | VIII | Global Green Organic Fertilizer Incorporated | Caduman, Mandaue City, Cebu | Amino Plus Organic Folia Fertilizer, GEM Enhancer Foliar Fertilizer, Milagrow Organic Feed Enhancer | 2018-10-12 | OCCP |
| 36 | XII | Greenmax Organik | Arellano St., Zone 6, Libertad Surallah, South Cotabato | Greenmax Organik BM, Greenmax Organik BM OFF (303) | 2018-08-01 | OCCP |

| # | REGION | COMPANY NAME | Address | PRODUCT/S | Certificate Expiration (YYYY-MM-DD) | Organic Certifying Body |
|----|--------|---|---|--|-------------------------------------|-------------------------|
| 37 | X | Greenminds Incorporated | Carmen, Cagayan de Oro, Misamis Oriental | Peanut (unshelled and roasted), herbs and chili | 2018-02-23 | OCCP |
| 38 | VII | Hatake | M.L. Quezon St., Caguntingan, Mandaue City, Cebu | Organic Fertilizer (Microbial) | 2018-07-31 | NICERT |
| 39 | IV-B | Jeaneleah Merchandising | Lombok Street, San Jose, Puerto Princesa City, Palawan | Biojadi Natural Bio Nutrients | 2018-02-18 | OCCP |
| 40 | CAR | JM Baguilat Farm | Bannat, Payawan, Lamut, Ifugao | In conversion - perennial crops, root crops, legumes, vegetables crops | 2018-12-17 | OCCP |
| 41 | CAR | JM Four Angels Farm (formerly 4 Angels Farm) | Manka-et, Buyacaoan, Buguias, Benguet | Vegetable crops, fruit crops, legumes, root crops | 2018-12-17 | OCCP |
| 42 | V | Joross Farm | Brgy Tinampo, Ligao City, Albay | Assorted Herbs and Vegetables | 2018-06-17 | OCCP |
| 43 | VIII | Juanito Eco-Farm School for Practical Agriculture | Brgy Montebello, Kananga, Leyte | Rice (paddy) | 2018-12-19 | NICERT |
| 44 | XII | Kablon Farm Foods Corporation | National Highway, Tupi, South Cotabato | Assorted fruits, VCO, Cocoa Powder, Cocoa butter, Dark Chocolate 80%, Dark Chocolate 70% | 2018-08-01 | OCCP |
| 45 | CAR | Kerobee Farm | La Trinidad, Benguet | Assorted Vegetables | 2018-12-18 | OCCP |
| 46 | XII | Kuvi Integrated Farm | Sito Tinago, Cabilao, Makilala, Cotabato | Civet Coffee, Coffee | 2018-08-01 | OCCP |
| 47 | VIII | La Granja de Reyna | Maharlika Highway, Brgy 93, Bagacay, Tacloban City | Vegetables and Fruits (Fresh Produce) | 2018-12-19 | NICERT |
| 48 | CAR | La Trinidad Organica Farmers Association (LA ORGANICA) | La Trinidad, Benguet | Assorted Vegetables | 2018-12-18 | OCCP |
| 49 | XI | Lao Integrated Farms Inc | LIFI Compound, Brgy Eman, Bansalan, Davao del Sur | Banana | 2018-07-19 | OCCP |
| 50 | XII | Lebak Sustainable Organic Agriculture Multi-Purpose Cooperative (LESOA-MPC) | Aurelio Freires Sr , Poblacion, Lebak, Sultan Kudarat | Unmilled Rice/Palay | 2018-10-10 | OCCP |
| 51 | II | Life Giving Center for Integral Evangelization Incorporated (LGCIEI) | #16 Basa Street Lunduyan Pastoral Center, Don Domingo Maddela, Bayombong, Nueva Vizcaya | Assorted Vegetables | 2018-03-08 | OCCP |
| 52 | CAR | Lily of the Valley Organic Farms | La Trinidad, Benguet | Assorted Vegetables | 2018-12-18 | OCCP |
| 53 | IX | Marvelous Organic Resources (Romelyn Agribusiness trading) | Casisang, Malaybalay City, Bukidnon | MPQ Liquid (Organic Plant Supplement), MPQ Fertilizer (Organic Plant Supplement) | 2018-02-15 | OCCP |
| 54 | CAR | Mhadam's Farm (formerly Borrowed Farm) | Manka-et, Buyacaoan, Buguias, Benguet | Vegetable crops, legumes, rootcrops, fruit crops | 2018-12-17 | OCCP |

| # | REGION | COMPANY NAME | Address | PRODUCT/S | Certificate Expiration (YYYY-MM-DD) | Organic Certifying Body |
|----|--------|---|--|--|-------------------------------------|-------------------------|
| 55 | VIII | Mike Pedroso Farms | Sitio Osog, Carayman, Calbayog City, Samar | Jackfruit (fresh Produce) | 2018-12-19 | NICERT |
| 56 | IV-A | Morningside Farms | Brgy Pangil, Amadeo, Cavite | Vegetables & Herbs (fresh Produce) | 2018-12-17 | NICERT |
| 57 | VI | Negros Island Organic Producers Association | Brgy Taloc, Bago City, Negros Occidental | Organic Rice (paddy) | 2018-12-14 | NICERT |
| 58 | CAR | ODAFAR Farm | Buyacaoan, Buguias, Benguet | Assorted Vegetables (Lettuce, Broccoli etc.) | 2018-12-17 | OCCP |
| 59 | VIII | OGAT Farm | Brgy. Cagsumje, Sta. Marganta, Samar | Rice (paddy) | 2018-12-19 | NICERT |
| 60 | IV-B | Palawan Organic Vegetable Breeding & Seeds Production Station | Brgy Irawan, Puerto Princesa City | Fresh Vegetables & Vegetable Seeds | 2018-08-10 | NICERT |
| 61 | III | Pampanga State Agricultural University - Alias R&D Center | San Agustin, Magalang, Pampanga | Vegetables, Fruits & Seeds | 2018-06-22 | NICERT |
| 62 | V | Pecwana Development Cooperative Inc. | Lanipga, Bula, Camannes Sur | Rice, Milled Rice, Pecwana Plant Supplement | 2018-05-17 | OCCP |
| 63 | XII | Phoenix Larrel Agriventures | National Highway cor NIA Service Road, Sto. Niño, Koronadal City, South Cotabato | Envirozone organic fertilizer | 2018-08-01 | OCCP |
| 64 | V | Pilipinas Shell Foundation | Shell House, 156 Valero St., Salcedo Village, Brgy Bel-Air, Makati City | Vegetables, Rice, Chicken, Ducks, Swine, Likas Saka Organic Fertilizer, Vermicompost | 2018-05-17 | OCCP |
| 65 | V | Polangui Organic Kalamay, Muscovado Producers and Farmer's Association, Inc. (POKAMPROFA) | Brgy Balaba, Polangui, Albay | Sugarcane, muscovado sugar, muscovado rocks, sangkaka | 2018-06-17 | OCCP |
| 66 | III | Ramon Magsaysay Center for Agricultural Resources & Environment Studies - CLSU | Science City of Muñoz, Nueva Ecija | Milled Rice, Assorted Vegetables, Seeds | 2018-04-19 | OCCP |
| 67 | XIII | Revolutionary Solutions Technologies & Products | No. 89 Marcos Highway, Mayamot, Antipolo City | Organic Fertilizer (plant Supplement) | 2018-12-21 | NCERT |
| 68 | XII | Robbies Green | BRISDIA Bldg, Prk. 5, Ugaya, General Santos City, South Cotabato | ROBBIE's Green Bio-Organic AGRIBEST | 2018-08-01 | OCCP |
| 69 | CAR | Saguilot's Farm | Lamut, Ifugao | Assorted vegetables (Pechay, Lettuce, Tomatoes, Sitao) | 2018-12-17 | OCCP |
| 70 | V | Sorsogon Provincial Organic Farming Practitioners Association (SPOFPA) | 3F Arellano Bldg, Magsaysay St., Borabod, Castilia, Sorsogon | Pili, Rice, Vegetables | 2018-05-17 | OCCP |
| 71 | V | St. Francis St. Rita Nature Farm (formerly St. Francis Integrated Farm) | Lupi, Camannes Sur | Swine, Goat, Duck, Chicken | 2018-05-17 | OCCP |
| 72 | I | Teraoka Farms, Inc | Brgy Cabaluyan 2nd, Mangatarem, | Fruits and Vegetables | 2018-05-24 | OCCP |

| # | REGION | COMPANY NAME | Address | PRODUCT/S | Certificate Expiration (YYYY-MM-DD) | Organic Certifying Body |
|----|--------|---|--|---|-------------------------------------|-------------------------|
| | | | Pangasinan | | | |
| 73 | V | Tonee's Farm | Brgy. Macalindong, Ligao City, Albay | Vegetable crops, legumes, root crops; in-conversion: poultry | 2018-06-17 | OCCP |
| 74 | VIII | Trophy Farm Supplies | Brgy. Montebello, Kananga, Leyte | Mushroom: Brown Oyster, White Oyster, Milky & Jew Ear (Fresh Produce) | 2018-12-19 | NICERT |
| 75 | CAR | Tublay Organic Farming Practitioner's Association | Tublay, Benguet | Assorted Vegetables | 2018-12-16 | OCCP |
| 76 | XII | Vermiflora Farm | Purok 1, Crossing Rubber, Tupi, South Cotabato | Vermilandia Soil Conditioner | 2018-08-01 | OCCP |
| 77 | III | Vieva Green Growth, Inc | Brgy. Cojuangco, Sta. Rosa, Nueva Ecija | Organic Liquid Fertilizer | 2018-12-07 | NICERT |
| 78 | IV-A | YCRF Enterprises | Biñan, Laguna | Power Solution Premium Liquid Organic Fertilizer (PSPLOF) | 2018-10-25 | OCCP |

Source: DA-BAFS

Appendix C. List of Approved Crop Varieties in 2017

| ECOSYSTEM / LINE DESIGNATION | NSIC REGISTRATION NUMBER | LOCAL NAME/ VARIETY NAME | RECOMMENDATION DOMAIN | BREEDER/OWNER Breeding Team |
|--|-----------------------------|-----------------------------|--------------------------|--|
| RICE | | | | |
| <i>Irrigated Lowland (Special Purpose)</i> | | | | |
| PR39494- NIPPONBARE- 25kR-29-1-1-1-1 (J) | NSIC 2017 Rc 482SR | Japonica 5 | National | PhilRice Thelma F. Padolina Rustum C. Bracerios Lenie R. Pautin |
| IR94746-24-3-2-2- 2(J) | NSIC 2017 Rc 484SR | Japonica 6 | National | IRRI Woon-Go Ha, Un-Sang Yeo, Gideon Torollo, Jeom-Sig Lee, Gideon Torollo |
| PR34859-B-4-1-1-2- 1(G) | NSIC 2017 Rc 31SR | Malagkit 6 | National | PhilRice Emily C. Arocena, Virginia P. Luciano, Henry T. Ticman, Ma. Corazon J. Cabral, Gloria M. Osoteo, Martha V. Chico, Thelma F. Padolina |
| <i>Irrigated Lowland (Hybrid)</i> | | | | |
| LP 534 | NSIC 2017 Rc 486H | Mestiso 80 | Luzon | Long Ping High-Tech. Sun, Zhenbiao, Yang, Yuanzhu, Fu, Chenjan, Qin, Peng |
| SL-19H | NSIC 2017 Rc 488H | Mestiso 81 | Visayas and Mindanao | SL Agri-Tech Corp. |
| PHILSCAT 9 | NSIC 2017 Rc 490H | Mestiso 82 | Luzon and Visayas | PhilSCAT Carlos Abon, Jr., Cheng Liangji, Francis E. Mina, Erickson C. Frediles, Cao Wen Liang |
| P2014-77 | NSIC 2017 Rc 492H | Mestiso 83 | Visayas | Pioneer Hi-Bred Phil. & VNR Seeds Pvt. Ltd. |
| INH13144 | NSIC 2017 Rc 494H | Mestiso 84 | Mindanao | Bayer Crop Science Yog Raj |
| PH11017 | NSIC 2017 Rc 496H | Mestiso 85 | Luzon | Syngenta Phil., Inc. |
| PH11014 | NSIC 2017 Rc 498H | Mestiso 86 | Visayas and Mindanao | Syngenta Phil., Inc. |
| PH11020 | NSIC 2017 Rc 500H | Mestiso 87 | Visayas | Syngenta Phil., Inc. |
| INH07028 | NSIC 2017 Rc 502H | Mestiso 88 | Luzon | Bayer Crop Science Yog Raj |
| IR81255H | NSIC 2017 Rc 504H | Mestiso 89 | Visayas | IRRI Fang Ming Xie, Jauhar Ali |
| CORN | | | | |
| <i>Hybrid Varieties (Yellow)</i> | | | | |
| TI 8332 | NSIC 2017 Cn 309 | DK 6999 | National | MONSANTO Phils. Inc. |
| BIO 9780 | NSIC 2017 Cn 310 | B9545 | Luzon | Bioseed Research Inc. |
| <i>Open Pollinated (Yellow)</i> | | | | |
| USMARC 1413 | NSIC 2016 Cn 307 | USM Var 41 | Visayas & Mindanao | USMARC, Kabacan North, Cotabato Prof. Efren E. Tagulama |

| ECOSYSTEM / LINE DESIGNATION | NSIC REGISTRATION NUMBER | LOCAL NAME/ VARIETY NAME | RECOMMENDATION DOMAIN | BREEDER/OWNER Breeding Team |
|------------------------------|--------------------------|--------------------------|-----------------------|---|
| FIELD LEGUMES | | | | |
| <i>Peanut</i> | | | | |
| ICGV 02227 | NSIC 2017 Pn 21 | | National | ICRISAT, India & DA-BPI-LGNCRDPSC |
| <i>Mungbean</i> | | | | |
| VC 6510-151 | NSIC 2017 Mg 18 | | National | World Vegetable Center & DA-BPI-LGNCRDPSC |
| VEGETABLES | | | | |
| <i>Garlic</i> | | | | |
| 12-001 | NSIC 2017 Gr 01 | Ilocos White (Balitok) | Ilocos Norte | DA Ilocos Region |
| 12-002 | NSIC 2017 Gr 02 | Batanes Red | Ilocos Norte | DA Ilocos Region |
| 12-005 | NSIC 2017 Gr 03 | Ilocos Pink (Gameng) | Ilocos Norte | DA Ilocos Region |
| 12-006 | NSIC 2017 Gr 04 | Mexican (Sanikua) | Ilocos Norte | DA Ilocos Region |
| 12-011 | NSIC 2017 Gr 05 | Bang-ar | Ilocos Norte | DA Ilocos Region |
| | NSIC 2017 Gr 06 | Ilocos Tan Bolters | Ilocos | MMSU |
| | NSIC 2017 Gr 07 | MMSU Gem | Ilocos | Leticia A. Lutap, Miriam E. Pascua, Marylis A. Nakundasan, Jonathan R. Ramos |
| FIBER CROPS | | | | |
| <i>Abaca</i> | | | | |
| Abuab | NSIC 2017 Mt 01 | Abuab | Luzon | PhilFIDA (sponsoring agency) |
| Inosa | NSIC 2017 Mt 02 | Inosa | Visayas | PhilFIDA & VSU-NARC (sponsoring agency) |
| Tangongon | NSIC 2017 Mt 03 | Tangongon | Mindanao | PhilFIDA (sponsoring agency) |
| TOBACCO | | | | |
| PVH2310 | NSIC 2017 Tc 19 | | | PMFTC, Inc. |
| PVH2233 | NSIC 2017 Tc 20 | | | PMFTC, Inc. |
| FRUIT CROPS | | | | |
| <i>Longan</i> | | | | |
| | NSIC 2017 Lg 01 | LRLVIAR Pride | | DA – NVES |
| | | | | Celerina T. Miranda |
| <i>Banana (Lakatan)</i> | | | | |
| | NSIC 2017 Bn 01 | Mapilek | | UPLB – IPB |
| <i>Mango</i> | | | | |
| | NSIC 2017 Mn 13 | BPI Golden Pico | | DA-BPI-GNCRDPSC |

Source: BPI

